# ATTACHMENT F

## ENVIRONMENTAL PROCEDURES



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Lockheed Corporation

# MANAGEMENT POLICY STATEMENT

NUMBER 173
EFFECTIVE 08-01-74
REVISION 4
EFFECTIVE 05-05-86

## ENVIRONMENTAL PROTECTION

## INTRODUCTION

In response to increased public awareness and demands for a clean environment, numerous federal, state, and local environmental laws and regulations have been enacted that affect industrial activities. Today's laws impact every aspect of the way Lockheed does business. Failure to comply with these requirements risks substantial damage to the environment. Significant enforcement provisions of the laws include possible criminal and civil penalties or debarment from federal contracts, grants, and loans.

The purpose of this Management Policy Statement is to establish Lockheed's position with respect to environmental protection for those Lockheed companies involved in industrial activities.

## BASIC POLICY

It is the policy of the Lockheed Corporation to be a good neighbor, to control all phases of our operations in an effort to eliminate adverse effects on the environment, and to comply with all applicable laws and regulations related to the environment.

## IMPLEMENTATION

### CORLAC Staff Responsibilities

The Corporate Director for Environmental Affairs, acting for the Corporate Vice President-Operations, is designated as the CORLAC Environmental Coordinator. In all matters involving environmental affairs, he shall work closely with appropriate Corporate Counsel as designated by the Vice President and General Counsel.

The CORLAC Environmental Coordinator is assigned the following responsibilities:

1. Monitor operating company compliance with corporate environmental policy and the various environmental laws and regulations. The CORLAC Environmental Coordinator will advise the President on the state of environmental compliance within the corporation.

2. Monitor developing environmental legislation and regulations and advise the Environmental Coordinators of the operating companies of developments in general, and specifically, those requiring action in order to maintain environmental compliance.

(over)

3. Provide the President with information and recommendations on corporate environmental policy and provide advice to the operating companies regarding compliance with corporate policy.

4. Maintain a current list of operating company Environmental Coordinators. The list will indicate which Environmental Coordinators and other employees are representing the companies on outside committees dealing with environmental matters, including industry associations, professional society committees, or other organizations where participation may benefit the corporation.

5. Assist Corporate Counsel in preparing the corporation's response in situations involving environmental enforcement actions where the corporation has been identified as a potential subject of an enforcement action.

The CORLAC Corporate Counsel assigned to environmental affairs by the Vice President and General Counsel is assigned the following responsibilities:

1. In concert with the CORLAC Environmental Coordinator, monitor developing environmental legislation and regulations and take appropriate action where necessary.

2. Coordinate the legal activities of the operating companies concerning environmental matters, including environmental enforcement actions involving the companies.

3. With the assistance of the CORLAC Environmental Coordinator, direct the corporation's response in situations involving federal Superfund or equivalent state actions where the corporation has been identified as a potentially responsible party.

The other CORLAC staff organizations will assist and coordinate the activities of the operating companies in their efforts to comply with environmental standards, rules and regulations. The particular staff office involved will be determined by the subject matter of the problem under consideration, i.e., Finance, Engineering, Human Resources and Corporate Communications.

Operating Company Presidents

1. It is the policy of the Lockheed Corporation that the management of each company is responsible for ensuring that all activities under its control are conducted in compliance with all applicable environmental laws and regulations.

2. Each operating company shall employ at least one professional Environmental Coordinator. The position of Environmental Coordinator shall be organizationally separate from both the Production and the Facilities Engineering Departments, or their equivalent, and shall report to at least the Director level. The name of the Environmental Coordinator at each company will be reported to the Corporate Vice President-Operations. Any change will be similarly reported.

3. Legal counsel specializing in environmental laws and regulations should be available to the Environmental Coordinator for review of current compliance status. Company Counsel is responsible for assuring that such legal expertise is available and utilized by the operating company.

4. Each company shall manage its operations to ensure full compliance with all applicable environmental laws, regulations and permits.

5. Each company shall ensure that wastes generated by company operations are managed, recycled, treated or disposed of in an acceptable manner. Each company will vigorously pursue a hazardous waste minimization program.

6. Exceptions to compliance with corporate policy will be reported to the CORLAC Environmental Coordinator on an ongoing basis.

7. Semi-annually, each operating company President shall report to the President-Lockheed Corporation all significant instances of ongoing noncompliance with environmental requirements, including violations of environmental laws and regulations. The report will include, as applicable:

   a. Nature of the noncompliance and what has been done to rectify the noncompliance or what will be done and how long it is expected to take. Identify all enforcement agencies involved in a matter of noncompliance.

   b. Exposure of Lockheed and its management to criminal and civil actions due to violations of environmental laws and regulations.

   c. Nature and amount of any fines and penalties levied due to violations of environmental laws and regulations.

8. Proper hazardous waste management will include the following, at a minimum:

   a. Identify all wastes generated from company operations and their method of disposal. Identify and periodically update the technology required to eliminate land disposal of hazardous wastes.

   b. Where off-site land disposal of hazardous wastes remains necessary, each land disposal site should be authorized individually, no less than annually and only by the operating company President by signing the reevaluation report prepared by the company Environmental Coordinator.

   c. Ensure that all on-site waste management practices are conducted in compliance with appropriate regulations and in a manner which minimized potential environmental impact.

   d. Ensure that contractors are properly permitted, including transporters, and that they can handle waste materials in an acceptable manner prior to contractual agreement.

(over)

1) Ensure that contractors are provided or otherwise have knowledge of the hazards inherent in the materials to be handled and have the ability to handle them safely and in an environmentally sound manner.

2) Evaluate the contractor's facilities prior to use and periodically thereafter to determine his ability to meet applicable laws and regulations and prevent danger to property, health and the environment.

3) At least annually, do a reevaluation of contractor facilities. This reevaluation shall take into account the quantity and nature of material handled and the relative risk to the corporation.

4) When possible, have the operator of the site where hazardous waste will be disposed of transport the waste, thereby ensuring that the fewest possible parties are involved with proper disposal of the waste.

9. Semi-annually report to the President on the quantities of hazardous waste managed off-site and the disposal methods employed by contractors.

10. Acquisitions and leasing of property or businesses carry with them risks which may not have been apparent previously. In particular, continuing liability for past waste disposal activities arising out of the Superfund law or for ground water contamination from prior manufacturing activities or leaking underground storage tanks can greatly alter the value of an acquisition and in the case of leases, increase the corporation's potential liability. Such possibilities should be recognized and provided for during the leasing or acquisition process.

    a. Prior to acquiring a business entity or a property or leasing of same which has been involved in commercial or industrial activities, the acquiring company shall ensure that all potential environmental liabilities arising from past operations have been disclosed and are recognized. Such steps should include, among other things, complete audits, ground water sampling and investigation. Even if nothing is revealed, contractual indemnification by the seller should be sought to further protect against exposure.

For detail guidance on this subject, refer to Operations Directive No. 17, Environmental Manual.

R. A. Fuhrman
President and
Chief Operating Officer

LOCKHEED CORPORATION

CORPORATE OPERATIONS DIRECTIVE

DIRECTIVE NO.: 17
EFFECTIVE: 5-5-86
REVISION NO.:
REV. EFFECTIVE:

# ENVIRONMENTAL MANUAL

Note: See Attached

Dale H. Daniels
Vice President-Operations

# ENVIRONMENTAL MANUAL

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# INTRODUCTION

Responsibility for achieving and maintaining compliance with the various laws and regulations governing the environmental impact of Lockheed's operations lies with the line organizations, supported by appropriate professional staff. This manual, as stated in MPS 173, describes actions to be taken by the Lockheed operating companies to maintain and assure such compliance and provides guidance on effective program management.

This manual is intended for use by operating company management in developing more effective environmental management programs on a consistent basis throughout the corporation. Included in the manual are discussions of corporate-wide requirements affecting environmental organization, staffing, internal compliance review and inspection, and noncompliance reporting. Specific guidance is offered in the areas of operating accountability, personnel training, operating procedures, planning facility alterations, and employee education.

## ORGANIZATIONAL CONSIDERATIONS

Today, environmental laws and regulations extend beyond simply controlling what leaves manufacturing sites. They often dictate how a product may be produced, how equipment is to be operated, and even the type of paint to be used. In this regulatory environment, operating in compliance with environmental requirements cannot be considered to be primarily a staff responsibility. Compliance is the direct responsibility of the individual manufacturing, operating or other organization whose activities are directly controlled by environmental requirements. In addition, because of the dire consequences of failing to comply, it is essential that a staff organization, independent of the production or operating organizations, be maintained to advise company management regarding the applicability of environmental requirements to company operations and to assure compliance by the company.

- It is the policy of the Lockheed Corporation that the management of each company is responsible for ensuring that all activities under its control are conducted in compliance with all applicable environmental laws and regulations.

- Each operating company shall employ at least one professional Environmental Coordinator. To qualify as a professional Environmental Coordinator, a person must have at least five years experience in the environmental field. This could be a combination of schooling in relative subjects plus experience in this field. The position of Environmental Coordinator shall be organizationally separate from both the Production and the Facilities Engineering Departments, or their equivalent, and shall report to at least the Director level.

- Legal counsel specializing in environmental laws and regulations should be available to the Environmental Coordinator for review of current compliance status. Company Counsel is responsible for assuring that such legal expertise is available and utilized by the operating company.

## ENVIRONMENTAL STAFF RESPONSIBILITIES

Each Lockheed company shall designate a professional Environmental Coordinator to advise management of actions needed to achieve and maintain compliance with environmental laws and regulations. The name of the Environmental Coordinator at each company will be reported to the Corporate Vice President-Operations. Any change will be similarly reported.

### CORLAC Staff Responsibilities

The Corporate Director for Environmental Affairs, acting for the Corporate Vice President-Operations, is designated as the CORLAC Environmental Coordinator. In all matters involving environmental affairs, he shall work closely with appropriate Corporate Counsel as designated by the Vice President and General Counsel.

The CORLAC Environmental Coordinator is assigned the following responsibilities:

- Monitor operating company compliance with corporate environmental policy and the various environmental laws and regulations. The CORLAC Environmental Coordinator will advise the President on the state of environmental compliance within the corporation.

- Monitor developing environmental legislation and regulations and advise the Environmental Coordinators of the operating companies of developments in general, and specifically, those requiring action in order to maintain environmental compliance.

- Provide the President with information and recommendations on corporate environmental policy and provide advice to the operating companies regarding compliance with corporate policy.

- Maintain a current list of operating company Environmental Coordinators. The list will indicate which Environmental Coordinators and other employees are representing the companies on outside committees dealing with environmental matters, including industry associations, professional society committees, or other organizations where participation may benefit the corporation.

- Assist Corporate Counsel in preparing the corporation's response in situations involving environmental enforcement actions where the corporation has been identified as a potential subject of an enforcement action.

The CORLAC Corporate Counsel assigned to environmental affairs is assigned the following responsibilities:

- Coordinate the legal activities of the operating companies concerning environmental matters, including environmental enforcement actions involving the companies.

- With the assistance of the CORLAC Environmental Coordinator, direct the corporation's response in situations involving federal Superfund or equivalent state actions where the corporation has been identified as a potentially responsible party.

In addition, the CORLAC Environmental Coordinator will monitor operating company progress against the established hazardous waste management policies and practices and coordinate activities to ensure proper contract disposal as well as:

- Maintain a current list of all treatment, recycle, or disposal contractors used by the operating companies. In cooperation with the operating companies, he will develop a schedule for periodic review of each contract waste management company used by the corporation, taking into account the quantity and nature of the material handled and the risk to the corporation.

- When advised of the intent of an operating company facility to seek a treatment, storage, or disposal facility permit under the Resource Conservation and Recovery Act (RCRA), review the need for the permit and advise the company on procedures for obtaining the permit.

Operating Company Environmental Coordinator Responsibilities

Each operating company shall have at least one environmental professional as the company Environmental Coordinator. Where an operating company operates facilities at more than one location, the company Environmental Coordinator will determine the need for a full time or part time site Environmental Coordinator. When Lockheed employees work at government owned sites, the company Environmental Coordinator shall review the activities being performed by Lockheed employees and determine the need for recommending or not recommending an on-site company Environmental Coordinator to the operating company president who is responsible to make the final decision on this matter. The responsibilities of the operating company Environmental Coordinator include the following:

- Act as the designated contact with regulatory agencies in matters relating to company environmental affairs.

- Monitor developing federal, state, and local environmental legislation and regulations and advise company management and the CORLAC Environmental Coordinator of the impact of new or changed environmental requirements on company operations.

- Routinely inspect company operations for compliance with environmental requirements and notify the involved management in writing where corrective action is needed. If prompt resolution is not achieved, notify the company president of the need to close down an operation when an operation is not or cannot be brought into compliance in a timely manner.

- Advise the CORLAC Environmental Coordinator in a timely manner when environmental laws, regulations or standards are violated.

- Assure the environmental compliance of satellite operations by assisting the site Environmental Coordinator in achieving compliance.

- Review all planned capital and operating changes of manufacturing processes and site facilities for compliance with environmental requirements.

- Advise the appropriate industrial operating groups of specific environmental training requirements and assist in conducting essential training.

## PERSONNEL AWARENESS AND TRAINING

Achieving and maintaining compliance with environmental requirements on an ongoing basis requires that each employee understand the restrictions that environmental laws and regulations may place upon doing his job, the consequences of violating those requirements, and management's commitment to compliance with the environmental laws and regulations governing Lockheed's operations.

- Each operating company shall ensure that all employees are aware of the various environmental laws and regulations affecting operations for which they are responsible. This shall include, at a minimum, statements of environmental requirements in written operating procedures and training courses.

- Written operating procedures and training courses will acquaint employees with their individual (and company) responsibilities for compliance with environmental requirements and the possible consequences of failing to comply.

## COMPLIANCE REVIEWS

A multi-tiered system of compliance reviews will be instituted and will be directed at assuring compliance.

### CORLAC

- The CORLAC Environmental Coordinator and designated Corporate Counsel shall establish a schedule for periodic review of the compliance status of each operating company. Such reviews will include internal inspections and outside consultant assessments, as required. At a minimum, major operating company performance will be reviewed every two years. Major findings of non-compliance in the CORLAC reviews shall be reported to the President of the operating company involved for correction.

### Operating Companies

- Responsible line organizations shall establish a system of inspections for compliance with environmental requirements applicable to their operations.

- The management of each department shall routinely review the operations under their control for compliance with environmental requirements.

- The company Environmental Coordinator shall routinely inspect operations for compliance with environmental requirements and site procedures. He shall provide a written report of deficiencies identified during the inspection to the affected Director, who shall provide a written report on the corrective disposition of each deficiency.

- The company Environmental Coordinator shall conduct a follow-up inspection after a reasonable time for correction of noncompliant aspects has passed. Any instance of repeat noncompliance shall be reported in writing to the company president.

## PROJECT AND PROCEDURE REVIEW

To assure that operating company facilities remain in compliance with environmental laws and regulations requires that any changes in industrial processes or site facilities which could impact the environment shall be reviewed by the company Environmental Coordinator.

- The Environmental Coordinator shall review all capital requests for industrial processes or site facilities for inclusion of adequate environmental requirements prior to the fixed asset on-site budget review and will continue his review at other project stages such as study requests, start of design, final design and installations or construction. The Environmental Coordinator must make a finding of environmental compliance before any new facility is placed in service.

- The Environmental Coordinator shall review and approve all equipment operating procedure changes which could impact environmental compliance.

- The company Facilities Engineering Department will during any major construction and in coordination with the Environmental Coordinator:

- Have fill dirt analyzed to assure that it is environmentally sound before it is used as backfill. Contaminated dirt will be rejected.

- Analyze any excavated material, including dirt, for environmental contamination if there are any indications such as visual or odoriferous contamination. If the analyses reveal contamination, the Environmental Coordinator will report to the CORLAC Environmental Coordinator.

## REPORTING ENVIRONMENTAL INCIDENTS

Environmental laws, regulations, and/or permits require that instances of environmental noncompliance be reported to the EPA or a state or local agency. This section provides guidance to the Lockheed operating companies on reporting environmental incidents to regulatory agencies.

- All instances of facility noncompliance which must be reported according to law, regulation, or permit condition will be reported to the appropriate agency as required by law, regulation, or permit condition.

- Where reporting is triggered by a subjective criterion (e.g. "significant impact on the environment"), the Lockheed operating companies will not judge the potential impact, but will report all incidents in excess of permit or regulatory limitations to the appropriate agency.

- When an incident occurs for which formal reporting is not required but which, in the judgment of the Environmental Coordinator, could adversely impact the environment, the appropriate agency will be notified verbally and in writing if requested.

## EMERGENCY RESPONSE

Each operating site maintains an up-to-date emergency response program to address such emergencies as fire or explosion on and off site. Each such program shall include specific plans to mitigate the impact of on-site or off-site emergency conditions on the environment.

## ENVIRONMENTAL CONSULTANTS

Each operating company shall develop a list of qualified environmental consultants who work in the environmental specialties. These lists shall be submitted to the CORLAC Environmental Coordinator, who shall maintain and circulate annually to the companies an up-to-date list of environmental consultants who have the capability to perform high quality work for the corporation.

Qualifications of Environmental Consultant should be on the same basis as any other professional consultant i.e. proficiency in subject matter, length of time in business and proven accomplishments for other companies.

## LONG-RANGE PLANNING

As environmental requirements continue to play an increasingly larger role in company operations, it is essential to develop plans to reduce both the impact of company operations on the environment and the impact of environmental requirements on the company. This will be accomplished through an environmental planning process, conducted with CORLAC oversight, directed at identifying and minimizing the impact of existing and forecast operations with potential environmental impact.

- The CORLAC Environmental Coordinator shall annually identify the environmental issues which appear to have the greatest potential impact on the corporation's operations and disseminate this information to the operating companies.

- Each operating company shall develop a long-range plan for minimizing the impact of company operations on the environment and the impact of environmental requirements on the company. The plan shall specifically address those issues raised by CORLAC and other issues of local importance.

## REGULATORY AGENCY INSPECTIONS

Inspections and site visits by environmental regulatory agency personnel are routine, but they require special attention -- particularly if made in conjunction with possible enforcement actions.

- The company Environmental Coordinator shall be the official company representative for regulatory agency site inspections or visits. The Environmental Coordinator shall review the credentials of agency personnel and shall be responsible for accomplishment of the site protocol procedures.

- Each operating location shall develop formal protocols for handling regulatory agency visits. The site protocol should:

  - Establish the specific level of company management to be involved with the visit,

  - Establish the purpose of the visit and ensure that appropriate counsel is advised if the visit is associated with an enforcement action,

  - Document events occuring during the visit,

  - Require that all samples taken by agency personnel be duplicated (split) by site personnel, and

  - Require follow-up on any items left open during the visit by the company Environmental Coordinator.

## ENVIRONMENTAL RECORDKEEPING

Extensive recordkeeping requirements are contained in environmental laws, regulations, and permits. Failure to maintain these records, as required, carries the same penalties as a substantive violation of a law, regulation, or permit.

- The company Environmental Coordinator shall identify the environmental recordkeeping requirements of the laws, regulations and permits which are applicable to the company and shall identify the department responsible for such records. Periodically, the company Environmental Coordinator shall follow-up to ensure that adequate records are being kept. The adequacy of these records shall be periodically assessed during the CORLAC Environmental Coordinator's site inspections.

## HAZARDOUS WASTE MANAGEMENT

Historic waste disposal practices within industry have resulted in environmental damage, generated substantial public concern, and resulted in highly restrictive laws which make the generators of wastes responsible for proper waste management and disposal -- even when the wastes are handled by third parties.

### CORLAC

It is the policy of the Lockheed Corporation to ensure that by-products resulting from our operations are managed and disposed of in an environmentally proper manner and in a manner which will minimize future liability of the corporation. It is the corporation's policy with respect to hazardous wastes to utilize treatment options which result in destruction of waste (such as incineration) or reduction in hazard, as opposed to use of landfills, to the maximum extent possible.

### Operating Companies

Each company shall ensure that wastes generated by company operations are managed, recycled, treated or disposed of in an acceptable manner. Each company will vigorously pursue a hazardous waste minimization program.

Exceptions to compliance with corporate policy will be reported to the CORLAC Environmental Coordinator on an ongoing basis.

Semi-annually, June and December of each year, each operating company president shall report to the President-Lockheed Corporation all significant instances of ongoing noncompliance with environmental requirements, including violations of environmental laws, regulations and permits. The report will include, as applicable:

- Nature of noncompliance and what has been done to rectify the noncompliance or what will be done and how long it is expected to take. Identify all enforcement agencies involved in a matter of noncompliance.

- Exposure of Lockheed and its management to criminal and civil actions due to violations of environmental laws, regulations or permits.

- Nature and amount of any fines and penalties levied due to violations of environmental laws, regulations and permits.

Proper hazardous waste management will include the following, at a minimum:

- Identify all wastes generated from company operations and their method of disposal. Identify and periodically update the technology required to eliminate land disposal of hazardous wastes.

- Where off-site land disposal of hazardous wastes remains necessary, each land disposal site should be authorized individually no less than annually and only by the operating company president by signing the re-evaluation report prepared of the site by the company's Environmental Coordinator.

- Ensure that all on-site waste management practices are conducted in compliance with appropriate laws, regulations and permits in a manner which minimized potential environmental impact.

- Ensure that contractors are properly permitted, including transporters, and that they can handle waste materials in an acceptable manner prior to contractual agreement with recycling or disposal companies.

- Ensure that contractors are provided or otherwise have knowledge of the hazards inherent in the materials to be handled and have the ability to handle them safely and in an environmentally sound manner with recyclers or disposal companies.

- Evaluate the contractor's facilities prior to use and periodically thereafter to determine his ability to meet applicable laws and regulations and prevent danger to property, health, and the environment.

- Obtain semi-annually a signed certification of compliance to all federal, state and local environmental laws and regulations from each of your disposal and recycling contractors. If possible, obtain from the contractors indemnification and hold harmless agreements to protect the company from liability for contractor mistakes.

- At least annually, do a periodic re-evaluation of contractor facilities for continued use. This re-evaluation shall take into account the quantity and nature of material handled and the relative risk to the corporation.

- When possible, have the operator of the site where hazardous waste will be disposed of transport the waste, thereby ensuring that the fewest possible parties are involved with proper disposal of the waste.

## PROCUREMENT AND LEASING OF PROPERTY

Acquisitions and leasing of property or businesses carry with them risks of environmental liability which may not have been apparent previously. In particular, continuing liability for past waste disposal activities arising out of the Superfund law or for ground water contamination from prior manufacturing activities or leaking underground storage tanks can greatly alter the value of an acquisition and in the case of leases increase the corporation's potential liability. Such possibilities should be recognized and provided for during the leasing or acquisition process.

- Prior to acquiring a business entity or a property which has been involved in commercial or industrial activities, the acquiring company shall ensure that all potential environmental liabilities arising from past operations have been disclosed and are recognized. Such steps should include, among other things, complete audits, ground water sampling and investigation. Even if nothing is revealed, contractual indemnification by the seller should be sought to further protect against exposure.

- Prior to consumating a lease, an investigation similar to that for acquisitions shall be done. An exception to this requirement is the leasing of an office building when no manufacturing will be done.

- Exemptions from these requirements may be obtained from the CORLAC Environmental Coordinator by presentation of adequate data for the exemption.

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Aircraft Corporation

# CALAC GENERAL PROCEDURE

NUMBER: 27

FIRST ISSUED: 4- 3-75

REVISED:

SHIPMENT OF HAZARDOUS MATERIALS

Ref: Safety Manual, Bulletin G-3

## PURPOSE:

To provide for proper identification of hazardous materials, preparation of shipping documents for shipment of such materials, and the in-plant handling of hazardous materials.

## GENERAL:

The Traffic, Factory Transportation, Highway Transportation and Stores & Shipping Departments are responsible for complying with all federal, state, and international laws governing shipment of all types of materials. Hazardous materials are equally dangerous to transport within Calac. It is important for the originator of the shipment to identify materials and paperwork properly for transportation.

For the purpose of this procedure, the following categories of material shall be considered hazardous:

1. Explosives.
2. Compressed gasses - flammable or non-flammable.
3. Corrosive liquids.
4. Poisons.
5. Radioactive substances.
6. Flammable liquids - flash point 100° F or below.
7. Combustible liquids - flash point 101° through 200° F.
8. Flammable solids and oxidizing materials.
   a. A flammable solid is any solid material, other than one classified as an explosive, which, under conditions incident to transportation, is liable to cause fires through friction, absorption of moisture, spontaneous chemical changes, retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation hazard. Examples: certain metallic hydrides, metallic sodium and potassium, and certain oily fabrics, processed meals, and nitrocellulose products.
   b. An oxidizing material is a substance such as a chlorate, permanganate, peroxide, nitro carbo nitrate, or a nitrate that yields oxygen readily to stimulate the combustion of organic matter.
9. Other - categories of materials other than those above which could create a hazard during shipment.

PROCEDURE:

I. All Branches shall:

A. Determine the hazardous nature and properties of the material by referring to LCP86-1223, the Engineering Purchasing Specifications, the Calac Safety Manual, and/or by contacting the Safety Department, Test Services, Materials & Processes and/or our supplier through procurement.

B. Contact the Traffic Department for instructions before preparing shipping documents.

1. Separate shipping documents must be prepared for each type of hazardous material to be shipped.

C. Stamp "DANGEROUS" on all shipping documents (shipping notice, material shipper, DD Form 1149, etc.)

1. The Department of Transportation (DOT) class of explosive and the word "Explosive" may be used instead of the Dangerous stamp.

D. The following information must be furnished to the Stores and Shipping Department and should be noted on shipping documents and the outside of containers or packages:

1. Flash Point of flammable or combustible material, name of article (chemical), specification number and type.

2. Compressed Gas, name, flammable or non-flammable, pounds per square inch.

3. Radioactive, class, chemical element, radionuclide and number of curies per unit.

4. Explosives, type and class (as defined in military Technical orders, Federal Stock lists, or ICC Regulations), nomenclature, chemical content and net quantity.

5. Corrosive Liquids, specify chemical name, % concentration and other hazards such as toxicity, flammability and explosiveness when applicable.

NOTE: Labels must meet minimum standards called out by Title 8 of the California State General Industry Safety Orders.

PROCEDURE: (continued)

D. 6. Poisons, class and chemical name.

NOTE: Labels must meet minimum standards called out by Title 8 of the California State General Industry Safety Orders.

7. Flammable Solids and Oxidizing materials, chemical name of item.

NOTE: Labels must meet minimum standards called out by Title 8 of the California State General Industry Safety Orders.

8. Net weight, quantity, and/or pressure of hazardous material, as applicable, for each of the above.

E. Segregate and keep separate from all other materisl, items classified as hazardous.

II. Quality Assurance shall:

A. Upon request, indicate the hazardous nature and properties of the materials to be shipped.

III. Manufacturing (and other organizations moving hazardous materials) shall:

A. Perform intra-plant transportation of all items identified as "Hazardous" in accordance with safety practices established by the Safety Department.

IV. Materiel shall:

A. Issue instructions to all departments concerning shipment of materials regarded as hazardous.

1. Determine, upon request, whether hazardous materials contemplated for shipment are suitable for transportation.

B. Perform inter-plant and highway transportation of all items identified as "Hazardous" in accordance with safety practices established by the Safety Department.

V. Product Support shall:

A. Prepare all items for shipment in accordance with state, federal, and international regulations.

PROCEDURE: (continued)

VI. Engineering (Materials and Processes) shall:

A. Maintain EPS and EPB 65-F/LCP 86-1223 up to date relative to the hazardous classifications of materials.

B. Upon request by other Branches, indicate the hazardous nature and properties of materials to be shipped.

VII. Industrial Relations (Safety Department) shall:

A. Upon request by other departments, interpret Federal, State, County, Local, etc., industry safety regulations.

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# CALAC GENERAL PROCEDURE

SUBSTANTIAL RISK FROM TOXIC SUBSTANCES

NUMBER: 31
FIRST ISSUED: 5-11-81
REVISED: 5-26-87

## PURPOSE

This Calac General Procedure is issued to implement the requirements of Management Directive 167 with respect to establishing a method of reporting substantial risk information to the Administrator of the Environmental Protection Agency (EPA).

The Federal Toxic Substances Control Act requires that any person who manufactures, processes or distributes in commerce a chemical substance or mixture and who obtains information that reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment, shall immediately inform the Administrator of the EPA of such information. Such notification is not required if such person has actual knowledge that the Administrator has been adequately informed of such information.

## DEFINITIONS

A. Person - as used above includes natural persons, corporations, joint ventures, partnerships, any State or political subdivision thereof, and any department, agency or instrumentality of the Federal Government.

B. Substantial risk information - means information which reasonably supports the conclusion that a chemical substance or mixture presents a substantial risk of injury to health or the environment.

C. Manufacture or process for commercial purposes - means to manufacture or process (1) for distribution in commerce, (2) for use as a catalyst or an intermediate, (3) for the exclusive use of the manufacturer or processor, or (4) for product research and development.

## GENERAL

A. Calac must report substantial risk information to the EPA within 15 working days of obtaining of such information.

B. Substantial risk information is obtained at the time it first comes into possession of a Calac employee capable of appreciating the significance of that information. (This

includes information which a prudent person capable of appreciating the significance of such information could reasonably be expected to possess or have knowledge.)

C. Information which must be reported includes those which have: (See Supplement 1.)

1. Human health effects.

2. Environmental effects.

3. Emergency incidents of environmental contamination.

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D. Proprietary information is reportable, but must be submitted in accordance with Management Directive 54, Protection of Proprietary Rights.

E. Classified information is reportable but must be submitted in accordance with Management Directive 107, Lockheed Private Data, and in compliance with government security classification guidance.

F. Reportable information within Calac must be reported as described below.

RESPONSIBILITIES

A. Cognizant organizations shall ensure that employees qualified to provide substantial risk information shall:

-r- 1. Report by IDC addressed to the Manager, Occupational Safety and Health Department (with copy to his own manager) the information leading to the conclusion of substantial risk and the sources of the information which reasonably supports the conclusion of substantial risk.

2. Report the above information within five (5) working days of concluding that there is a substantial risk.

B. Human Resources (Occupational Safety and Health Department) shall:

-r- 1. Review information submitted by employees to ensure that it is not exempt from reporting.

2. Submit required reports to the Administrator, EPA, within ten (10) working days of receipt of such reports from employees.

-r- 3. In coordination with Industrial Security Administration Department, review classified information that is reportable and provide instructions regarding its submission.

4. In coordination with the Legal Branch, review proprietary information that is reportable and provide instructions regarding its submission.

-r- 5. Notify employee submitting report of Calac's disposition of the reported information. If Calac does not submit the information, notify employee of his individual right to submit the report to EPA. These actions must be taken within ten (10) days of receipt of the report.

PENALTIES

It is unlawful for any person to fail or refuse to submit information required under the Toxic Substances Control Act, Section 8(e) Notification of Substantial Risk. Violation of the applicable section of the Act renders a person liable for a civil penalty and possible criminal prosecution.

References

MPS 173 - Environmental Protection
MD 167 - Environmental Protection
GP 41 - Hazardous Waste Management Program

R. R. Heppe
President
Lockheed-California Company

-d- Deleted
-r- Revised

LOCKHEED-CALIFORNIA COMPANY
A Division of Lockheed Corporation

CGP: 31
Supplement: 1
First Issued: 5-11-81
Revised: 5-26-87

Subject: REPORTABLE SUBSTANTIAL RISKS

A "substantial risk of injury to health or the environment" is a risk of considerable concern because of (a) the seriousness of the effect (see A, B, and C, below, for an illustrative list of effects of concern), and (b) the fact or probability of its occurrence. (Economic or social benefits of use, or costs of restricting use are not to be considered in determining whether a risk is "substantial.") These two criteria are differentially weighted for different types of effects. The human health effects listed in A, below, for example, are so serious that relatively little weight is given to exposure; the mere fact the implicated chemical is in commerce constitutes sufficient evidence of exposure. In contrast, the remaining effects listed in B and C, below, must involve, or be accompanied by the potential for, significant levels of exposure (because of general production levels, persistence, typical uses, common means of disposal, or other pertinent factors).

The Agency considers effects for which substantial risk information must be reported to include the following:

A. Human health effects

1. Any instance of cancer, birth defects, mutagenicity, death, or serious or prolonged incapacitation, including the loss of or inability to use a normal bodily function with a consequent relatively serious impairment of normal activities, if one (or a few) chemical(s) is strongly implicated.

2. Any pattern of effects or evidence which reasonably supports the conclusion that the chemical substance or mixture can produce cancer, mutation, birth defects or toxic effects resulting in death, or serious or prolonged incapacitation.

B. Environmental effects

1. Widespread and previously unsuspected distribution in environmental media, as indicated in studies (excluding materials contained within appropriate disposal facilities).

2. Pronounced bioaccumulation. Measurements and indicators of pronounced bioaccumulation heretofore unknown to the Administrator (including bioaccumulation in fish beyond 5,000 times water concentration in a 30-day exposure or having an n-octanol/water partition coefficient greater than 25,000) should be reported when coupled with potential for widespread exposure and any nontrivial adverse effect.

3. Any nontrivial adverse effect, heretofore unknown to the Administrator, associated with a chemical known to have bioaccumulated to a pronounced degree or to be widespread in environmental media.

4. Ecologically significant changes in species' interrelationships; that is, changes in population behavior, growth, survival, etc., that in turn affect other species' behavior, growth, or survival.

   Examples include:

   a. Excessive stimulation of primary producers (algae, macrophytes) in aquatic ecosystems, e.g., resulting in nutrient enrichment, or eutrophication, of aquatic ecosystems.

   b. Interference with critical biogeochemical cycles, such as the nitrogen cycle.

5. Facile transformation or degradation to a chemical having an unacceptable risk as defined above.

C. Emergency incidents of environmental contamination

Any environmental contamination by a chemical substance or mixture to which any of the above adverse effects has been ascribed and which because of the pattern, extent, and amount of contamination (1) seriously threatens humans with cancer, birth defects, mutation, death, or serious or prolonged incapacitation, or (2) seriously threatens nonhuman organisms with large-scale or ecologically significant population destruction.

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# CALAC GENERAL PROCEDURE

NUMBER: 32
FIRST ISSUED: 10-12-81
REVISED: 05-06-87

HAZARDOUS MATERIALS CONTROL PROGRAM

## PURPOSE

This Calac General Procedure is issued to implement the provisions of Management Directive 166, Occupational Safety and Health, with respect to the using, handling, transporting, or storing of hazardous materials between and within plants, and to remote Lockheed sites on a daily basis. Stringent legal guidelines exist on proper storing, packing, shipping and disposing of these materials. The purpose of this procedure is to delineate organizational responsibility in the Company's hazardous materials control program. (Note: All organizational responsibilities include their ADP counterparts.)

## DEFINITIONS

Hazardous Material - Any chemical or substance having known or suspected characteristics which may cause bodily injury or death to a person by its chemical or physical properties, cause significant property damage and/or contaminate the environment.

Material Safety Data Sheet (MSDS) - Also called Form OSHA-20 or equivalent. A form supplied by the manufacturer of a hazardous material which delineates fire, health and safety precautionary/ emergency data.

## RESPONSIBILITIES

A. Materiel Branch

1. Procurement Departments shall:

a. Obtain current MSDSs for those materials identified by the Occupational Safety and Health Department as "hazardous," and forward this information to the Occupational Safety and Health Department.

b. Ensure that hazardous material suppliers/ manufacturers continue to update MSDSs as changes in their products are effected.

-r- 2. Receiving and Stores Department shall:

a. Verify that all containers are properly identified as to contents by the manufacturer and stored accordingly.

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-r- b. Ensure that all containers are stored, or shipped in compatible loads.

c. Call the Occupational Safety and Health Department if in doubt as to material contents/properties.

d. Review MSDS information with all supervision and employees who handle these hazardous materials.

3. Traffic and Transportation Department shall:

a. Secure all necessary governmental permits and/or authorization for transportation of hazardous materials by Lockheed vehicles over public roadways.

b. Ensure that applicable guidelines pertaining to maximum quantities, compatibilities, packaging, and documentation are met.

c. Ensure that truck drivers transporting hazardous materials are aware of requirements of the Code of Federal Regulations (CFR 49), paragraphs 171.15 and 171.16.

-r- d. Advise affected requesting organizations of regulations governing shipping, transporting, and packaging requirements, upon request.

e. Secure necessary permits and/or authorization for commercial transportation by rail, air, sea, or truck.

B. Product Support Branch

-r- 1. Overhaul and Repair and Logistics Services Departments shall:

-a- a. Verify that all containers are properly identified as to contents by the manufacturer and stored accordingly.

b. Package and label all hazardous materials in accordance with instructions issued by the Traffic and Transportation Department.

c. Call the Occupational Safety and Health Department if in doubt as to material contents/ properties.

-a- d. Review MSDS information with all supervision and employees who handle these hazardous materials.

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C. Facilities Engineering Branch

-r- 1. Plant Area and Field Engineering Department shall:

a. Ensure that outside contractors under the jurisdiction of Facilities Engineering comply with appropriate standards of hazardous material use, storage, and transportation while on Lockheed facilities.

D. Engineering & Development shall:

1. Request current MSDSs from suppliers of all hazardous materials, bought directly or tested, and forward the information to the Occupational Safety and Health Department.

2. Ensure that hazardous materials suppliers/manufacturers continue to update MSDSs as changes in their products are effected.

E. Human Resources Branch

1. Occupational Safety and Health Department shall:

a. Identify as "hazardous" those materials requiring MSDSs.

b. Collect, screen, and maintain MSDS information.

c. Disseminate MSDS information to using departments and the Fire and Medical Departments.

d. Establish criteria for the safe receipt, storage, and use of hazardous materials.

e. Remove the MSDS sheet and deny Calac use of any material deemed unacceptably hazardous.

2. Human Resources Development Department and the Human Resources Palmdale Department shall:

a. Ensure that personnel involved in the hazardous materials control program have been instructed as to legal responsibilities.

b. Schedule and provide training as requested by using departments of MSDS information for affected personnel.

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F. Security Branch

1. Fire Protection Division shall:

a. Respond to emergency situations, i.e., leaks, spills, overexposure.

b. Oversee and direct all cleanup activity including containerization, labeling and transportation.

c. Ensure that all fire fighting personnel on-site have adequate personal protective equipment based on the hazardous material involved.

G. All Using Departments shall:

-r- 1. Review MSDS information with all personnel prior to the handling and use of hazardous materials.

2. Coordinate with the Occupational Safety and Health Department regarding the potential hazardous nature of new materials.

3. Comply with and enforce safety guidelines as specified by the MSDS or the Occupational Safety and Health Department.

4. Supply appropriate documentation and labeling as required for use, shipping, storage, disposal of hazardous materials.

5. Alert the General Procurement and Outside Production Department - All Models by denoting "Hazardous Material: MSDS Required" on purchase requests involving hazardous materials where no MSDS is available. Forward copy upon receipt to the Occupational Safety and Health Department. Contact the Occupational Safety and Health Department if in doubt as to requirements for an MSDS.

6. Ensure that the Fire Protection Department is notified, 7-FIRE (Burbank) and FIRE (Palmdale), of any and all emergency situations, i.e., leaks, spills, overexposures and unusual situations.

-d-

References

MPS 169 - Occupational Safety and Health
MD 166 - Occupational Safety and Health
GP 33 - Control and Use of Lifting Equipment

R. R. Heppe
President
Lockheed-California Company

-a- Added
-d- Deleted
-r- Revised

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# CALAC GENERAL PROCEDURE

NUMBER: 41

FIRST ISSUED: 8-26-85

REVISED:

HAZARDOUS WASTE MANAGEMENT PLAN

AFFECTED ORGANIZATIONS:

Advanced Development Projects (ADP)
Construction and Design Engineering
Engineering & Development
Environmental Affairs
Factory Transportation
Fire Protection
Inventory Control
Maintenance
Materiel Control
Occupational Safety and Health
Overhaul and Repair
Planning Control and Manufacturing Engineering
Plant Area Engineering
Quality Assurance
Receiving and Stores
Scientific and Technical Training
Traffic and Transportation

PURPOSE:

This Calac General Procedure is issued to implement the provisions of Management Directive 167, Environmental Protection, with respect to the handling and disposition of hazardous wastes. Stringent regulatory guidelines govern the accumulation, transportation, storage, and disposition of these wastes. The following identifies organizational responsibilities and delineates general procedures pertaining to the Calac Hazardous Waste Management Program. (Note: Organizational responsibilities defined herein shall apply to their ADP counterparts.)

DEFINITIONS:

Hauler - A hauler registered with the State of California to transport hazardous waste over public roadways.

Hazardous Waste - Any material or mixture of materials which have fulfilled their originally intended use and are toxic, corrosive, flammable, irritating, sensitizing or which generate pressure through decomposition, heat or other means, if such a waste or mixture of waste may cause substantial injury, serious illness or harm to humans, domestic livestock or wildlife.

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Hazardous Waste Accumulation Area - A facility specifically designed for the receipt of containerized hazardous wastes from Hazardous Waste Accumulation Stations prior to shipment to Plant B-1 Reclamation. The Environmental Affairs Department must approve these areas and identify each with a Hazardous Waste Accumulation Area identification placard.

Hazardous Waste Accumulation Station - A site established within the workplace specifically for the collection and containerization of hazardous waste materials.

Hazardous Waste Facility Permit - The document issued by the State of California which grants the authority to operate a transfer station or a hazardous waste facility.

Hazardous Waste Management - The program for controlling the generation, storage, collection, transportation, treatment, conversion or disposal of hazardous wastes.

Manifest - The Uniform Hazardous Waste Manifest which serves as the record of quantity, description, classification and destination of hazardous waste transported by a waste hauler to a recycling, treatment, storage or disposal facility. This document also serves as the Company's record verifying that the wastes were received at the designated facility.

Outlying Facility - For the purposes of this procedure, "Outlying Facility" means any plant, unit or site other than Plant B-1.

Secondary Containment - Any vault, pit, sump, curb or berm constructed for the purpose of containing or collecting liquids released from a primary containment tank, vessel, machine or drum as a result of a leak or rupture so as to prevent the liquids from migrating to a storm drain, sewer or to open ground.

Waste Transfer Facility - A permitted facility which handles, stores, treats or disposes of hazardous wastes. The Calac Waste Transfer Facility is Building 143, Plant B-1.

RESPONSIBILITIES:

A. Facilities Engineering Branch

1. Environmental Affairs Department shall:

a. Direct the Calac Hazardous Waste Management Program to ensure that waste materials are managed, recycled, treated or disposed of in an acceptable manner.

b. Identify all hazardous wastes generated from Calac operations. Review/update waste handling procedures to promote waste minimization.

c. Establish waste management practices that comply with applicable regulations and mitigate potential impacts to the environment.

d. Assist in the selection and approval of contractors to transport, treat, store and/or dispose of hazardous wastes.

(1) Ensure that contractors are licensed and handle hazardous wastes in an environmentally sound manner.

(2) Minimize the number of contractors handling waste materials.

(3) Review contractor procedures on a regularly scheduled basis. Contractors for land disposal sites should be reviewed and authorized annually by the Company President.

e. Coordinate waste disposal for departments with specialized, non-routine hazardous wastes.

f. Inspect operations for compliance with environmental requirements and site procedures. Record and forward discrepancies to the affected Department Director for written response. Conduct follow-up inspections to insure compliance. Exercise full authority to suspend operations when significant violations of hazardous waste regulations exist.

(1) Inspect interior Secondary Containment facilities in production areas (pits, sumps, berms, etc.) and request the Facilities Engineering Maintenance Department to remove waste material as necessary.

(2) Provide guidelines for completion of tri-annual audits to departments identified in MD 167 as those subject to environmental review.

g. Secure all permits and certifications necessary for the operation of hazardous waste-related facilities, excepting:

(1) Construction Permits
(2) Notices of Completion
(3) Certificates of Occupancy

h. Develop written procedures pertaining to the proper handling and transport of hazardous wastes. Assist the Training Department in the development of courses to educate employees in the handling and transport of hazardous wastes.

i. Assist all branches in complying with federal, state and local hazardous waste regulation.

j. Report instances of environmental non-compliance as required by law. Respond to inquiries from affected agencies regarding environmental non-compliance, as necessary.

k. Assist the Fire Protection Department in the development and maintenance of an emergency response program to address the uncontrolled release of hazardous wastes to the environment. Designate a representative to serve on the Chemical Spill Prevention, Control and Countermeasures Committee (as per Safety and Health Manual, Bulletin C-13).

l. Support the Facilities Engineering Branch in efforts to develop and maintain long-range hazardous waste management plans. Assist the Director of Facilities Engineering and Corlac representatives in the planning process.

m. Review all capital requests for manufacturing processes or site facilities to insure inclusion of adequate provisions for the handling and management of hazardous waste. Project review is to begin prior to the fixed asset on-site budget review and is to continue throughout installation or construction. Determine that a project is in compliance with environmental regulations prior to placing any facility in service.

   (1) Review all changes in existing equipment operation procedures which could impact environmental compliance.

   (2) Analyze any excavated material where environmental contamination is suspected.

n. Coordinate inspections from regulatory agencies. Develop appropriate protocols for handling regulatory agency visits. Initiate follow-up on any matters requiring attention resultant from inspection.

o. Establish procedures adequate to address recordkeeping requirements resultant from the management of hazardous wastes. Make records available for review upon request.

p. Assist the Facilities Engineering Branch in reviewing properties or businesses prior to acquisition to determine compliance with hazardous waste regulations, on an as-needed basis.

q. Develop and maintain liaison with Corlac personnel, to include:

(1) Semi-annual reports to the President-Lockheed Corporation addressing significant instances of ongoing noncompliance with environmental regulations.

(2) Semi-annual reports to the President-Lockheed Corporation listing types and quantities of hazardous wastes managed off-site and the disposal, treatment or recycling/reclaiming methods employed by the treatment, storage and disposal facilities receiving waste.

(3) Communication with the Corlac Environmental Coordinator when environmental laws, regulations or standards are violated.

(4) Annual report to the Corlac Environmental Coordinator listing qualified environmental consultants.

2. Construction and Design Engineering Department shall:

a. Provide engineering services for the design and construction of hazardous waste facilities. Obtain Environmental Affairs Department approval of such designs.

b. Develop, in conjunction with Environmental Affairs, specification and design standards for Hazardous Waste Accumulation Stations/ Areas, as needed.

c. Insure that outside contractors under the jurisdiction of Facilities Engineering comply with regulations governing the handling and disposal of hazardous wastes generated as a result of construction activities on company property.

d. Inspect and/or have analyzed all fill materials to insure fitness for use. Analyze excavated materials for evidence of contamination, as needed.

3. Maintenance Division shall:

a. Assume prime responsibility for the disposal of soluble oils, hydraulic and machine oils, and other residual liquid wastes accumulated in sumps, tanks, clarifiers, and berms.

b. Familiarize departmental personnel responsible for the generation and accumulation of hazardous wastes with the general procedures defined herein.

c. Inspect outside Secondary Containment installations and remove and containerize waste materials found therein.

(1) Unidentified waste materials are to be referred to the Quality Assurance lab for sampling and analysis.

d. Respond to requests from Environmental Affairs to remove waste materials from interior Secondary Containment installations.

e. Provide representation on the Chemical Spill Prevention, Control and Countermeasures Committee (as per Safety and Health Manual, Bulletin C-13).

4. Plant Area Engineering Department shall:

a. Inspect warehouse and laboratory Hazardous Waste Accumulation Stations/Areas at two-week intervals to insure that:

(1) Acceptable storage practices are followed.

(2) Containers are sound, capped, upright and palletized.

(3) Hazardous waste labels are properly filled out and affixed to containers.

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(4) Containers of new or unused materials are not commingled with hazardous waste containers.

(5) The ninety (90) day time limit from the accumulation start date shown on the hazardous waste labels has not been exceeded.

b. Report deficiencies in the use of Hazardous Waste Accumulation Stations/Areas to appropriate management personnel and follow-up to insure that corrective actions are undertaken.

B. Materiel Branch

1. Materiel Control shall:

a. Assume overall responsibility for the collection, transportation and disposal of containerized hazardous wastes.

b. Respond to requests for information regarding the proper packaging of hazardous wastes for transport

c. Provide representation on the Chemical Spill Prevention, Control and Countermeasures Committee (as per Safety and Health Manual, Bulletin C-13).

2. Traffic and Transportation Department shall:

a. Transport containerized waste materials from Hazardous Waste Accumulation Areas at Outlying Facilities to the Plant B-1 Waste Transfer Facility.

(1) Hazardous waste containers are not to be transported in-plant or across public roads unless accompanied by affixed, completed hazardous waste labels.

(2) Hazardous waste is not to be transported along public roadways unless accompanied by a completed Uniform Hazardous Waste Manifest.

b. Secure all necessary government permits, registrations, certifications, and/or authorizations for transport of hazardous waste by Lockheed vehicles along public roadways.

c. Insure that Calac drivers transporting hazardous waste are in compliance with applicable regulations.

d. Maintain transporter liability insurance in accordance with limits specified in Part 387, Title 49, Code of Federal Regulations.

3. Inventory Control shall:

a. Receive and store containerized waste at the Plant B-1 Waste Transfer Facility.

(1) Store containers in designated segregated storage areas.

(2) Assure that all stored wastes are manifested.

(3) Assure wastes are removed by licensed waste haulers within the time frame prescribed by the Plant B-1 Waste Transfer Facility Permit.

b. Maintain a log recording dates, quantities and types of all wastes received and shipped out of the Plant B-1 Waste Transfer Facility.

c. Inspect Plant B-1 Waste Transfer Facility on a weekly basis to insure:

(1) Storage of containerized waste in proper storage areas.

(2) Waste containers are sound, capped, upright and labeled.

(3) Sumps installed for collection of spilled materials are pumped as required.

(4) Required signs are in place and in good condition.

(5) Adequacy and condition of safety and emergency equipment.

(6) Good housekeeping practices are followed.

d. Complete Plant B-1 Waste Transfer Facility inspection reports and forward to Environmental Affairs at D/39-04, B/85, P/A-1, on a monthly basis.

e. Prepare and submit data to the Environmental Affairs Department for the annual report to the State of California Department of Health Services by March of each year detailing activity at the Plant B-1 Waste Transfer Facility.

f. Administer training programs for personnel handling hazardous wastes. Maintain training records for employees receiving instruction.

g. Make available to the Environmental Affairs Department solvent, paint and paint related material disbursement records, as required by the South Coast Air Quality Management District.

4. Receiving and Stores Department shall:

a. Maintain supply of sound, capped Department of Transportation (DOT) approved containers for accumulation of hazardous wastes. Provide containers to organizations generating hazardous wastes, upon request.

C. Manufacturing Branch

1. Planning Control and Manufacturing Engineering (Burbank and Plant 10) shall:

a. Comply with the requirements of A.4.a and b with respect to all manufacturing operations.

b. Conduct triannual audits of operations to verify adherence to hazardous waste handling/ disposal procedures.

2. Factory Transportation shall:

a. Provide intraplant transportation for all containerized hazardous waste.

1. Hazardous waste containers are not to be transported unless accompanied by an affixed, completed hazardous waste label.

2. Hazardous waste is not to be transported along public roads by Factory Transportation.

3. Plant B-1 Factory Transportation shall complete an "in-house" Hazardous Waste Manifest for all intraplant shipments to the Plant B-1 Waste Transfer Facility.

D. Human Resources Branch

1. Scientific and Technical Training Department shall:

a. In conjunction with the Environmental Affairs and Traffic and Transportation Departments, prepare training programs on the requirements for handling, storage, transportation and disposition of hazardous waste.

b. Schedule training sessions for personnel involved in the handling/management of hazardous waste, as needed.

c. Provide technical training for the Chemical Spill Prevention, Control and Countermeasures Committee, as requested.

2. Occupational Safety and Health Department shall:

a. Provide representation on the Chemical Spill Prevention, Control, and Countermeasures Committee (as per Safety and Health Manual, Bulletin C-13).

E. Security Branch

1. Fire Protection Departments (Burbank and Palmdale) shall:

a. Assume full responsibility for coordination of the emergency response in the event of an accidental, uncontrolled release of hazardous material (as per Safety and Health Manual, Bulletin C-13).

b. Upon notification of off-site spillage of hazardous material, contact the following:

(1) National Response Center, at 800-424-8802.

(2) Occupational Safety and Health Department, at 7-3091.

(3) Environmental Affairs Department, at 7-5144.

c. Upon notification of on-site spillage of hazardous material, contact the Environmental Affairs Department at extension 7-5144 (for determination of whether or not the incident is reportable under federal law).

d. Chair the Chemical Spill Prevention, Control, and Countermeasures Committee (as per the Safety and Health Manual, Bulletin C-13).

F. Product Assurance Branch

1. Quality Assurance Lab shall:

a. Dispose of routinely generated spent or contaminated process solutions and degreaser solvents (excepting process solutions from Buildings 360, 371 and 379).

b. Sample and analyze unidentified materials upon request, providing the requestor with a written report identifying such materials in an expeditious manner.

c. Sample and analyze waste streams at selected Calac sites daily, monthly, and quarterly so as to comply with department regulations.

(1) Submit results to the Environmental Affairs Department as follows:

(a) Daily samples - within four (4) hours

(b) Monthly samples - within two (2) weeks

(c) Quarterly samples - within sixty (60) calendar days.

d. Conduct triannual audits of operations to verify adherence to hazardous waste handling/ disposal procedures.

G. Product Support Branch (Overhaul and Repair Department) shall:

a. Conduct triannual audits of laboratory operations to verify adherence to hazardous waste handling/ disposal procedures.

H. Engineering & Development Branch

1. The Director of Engineering - Test & Evaluation, shall assure that:

a. Triannual audits of operations to verify adherance to hazardous waste handling/disposal procedures are conducted at the Burbank, Rye Canyon and Palmdale labs and shops, and at other remote sites, as required.

I. ADP

1. ADP Operations shall:

a. Provide technical support to the Director of Environmental Affairs on engineering, material, and process alternatives for compliance with applicable hazardous waste management regulations.

b. Incorporate hazardous waste compliance requirements into applicable ADP control documentation.

c. Conduct triannual audits of operations to verify adherence to hazardous waste handling/disposal procedures.

d. Assume responsibility for the disposal of bulk process solutions at Buildings 371 and 379, as needed.

e. Comply with the requirements of A.4.a and b as applicable to ADP manufacturing and engineering operations.

2. ADP Factory Transportation shall:

a. Transport containerized waste materials intra-plant within Plants B-6, C-1, 2, Bldg. 199 and Unit 42.

(1) Hazardous waste containers are not to be transported unless accompanied by an affixed, completed hazardous waste label.

(2) Hazardous waste is not to be transported along public roadways by ADP Factory Transportation.

R. R. Heppe
President
Lockheed-California Company

Reference Documents

MPS 173 - Environmental Protection
MD 167 - Environmental Protection
Hazardous Waste Management Manual

*Complete Revision

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# MANAGEMENT DIRECTIVE

NUMBER: 100
FIRST ISSUED: 1-14-55
REVISED: 10-21-82

FIRE HAZARD CONTROL

I. It is the policy of the Lockheed-California Company to .

Continually inspect its plant and facilities for fire and related hazards and to take corrective action based upon inspection findings and the recommendations of insurance underwriters and others pertaining to the reduction of such hazards.

II. Responsibility is assigned to

-r- A. Fire Chief, acting as Chairman of the Fire Hazard Committee, to

-r- 1. Periodically inspect Calac facilities with the assistance of the Committee members:

Production Manager - Fabrication
Director Burbank Assembly/Plant Manager - Plant 10
Manager - ADP Operations
Chief Manufacturing Engineer
Manager - Industrial Security Department
Calac Property & Casualty Insurance Administrator
Chief Facilities Engineer - Maintenance

-r- 2. Review and evaluate, in conjunction with the Calac Property & Casualty Insurance Administrator, insurance underwriters' inspection findings and recommendations and initiate corrective actions.

3. Obtain advisory services of the Director of Corporate Insurance and representatives from insurance brokers.

4. Maintain working interface with the General Safety Committees and the Occupational Safety & Health Department.

5. Approve facility plans for fire safety and monitor demolition and construction activities presenting possible fire hazard.

6. Refer to the Chairman of the Disaster Prevention Committee each instance where a major fire protection recommendation by the insurer is rejected or where less than "Highly Protected Risk" fire protection standards and watchman service are to apply to a specific facility. (See Explanatory Note No. 1.)

II. A. 7. Prepare periodic reports to the Chairman of the Disaster Prevention Committee and to the President regarding the status of fire hazard control activities.

B. Industrial Relations to

Maintain continuous surveillance of the plant and facilities to detect hazardous conditions and monitor hazardous operations.

C. All Organizations to

Be constantly alert to detect potentially hazardous conditions and report them promptly to the Industrial Relations Branch and to the branch responsible for taking corrective action.

Explanatory Notes

1. More favorable fire insurance rates are available for property which has optimum fire protection. Such protection includes an adequate water supply, sufficient sprinklers or other automatic protection, and watchman service. The insurance term for such property is a "Highly Protected Risk."

2. Related Directives include:

Management Directive 174 - Fire Protection and Control
Committee Functions & Responsibilities Statement - Fire Hazard Committee

E. M. Cortright
President
Lockheed-California Company

-a- Addition
-r- Revision

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# MANAGEMENT DIRECTIVE

NUMBER: 166
FIRST ISSUED: 2-13-78
REVISED: 4-28-87

OCCUPATIONAL SAFETY AND HEALTH

I. It is the policy of the Lockheed-California Company to

-r- A. Provide employees with a safe and healthful work area, safety training, safe machinery and equipment, and protection from explosives, toxic substances and materials.

B. Comply with the spirit and intent of applicable standards and requirements of federal, state and local Occupational Safety and Health laws and seek relief only when standards are considered to be impractical.

II. Responsibility is assigned to

A. Human Resources

1. Occupational Safety and Health Department to

a. Serve as the Company's focal point for administering all aspects of the Occupational Safety and Health program.

b. Assist all branches in complying with requirements of federal, state and local Occupational Safety and Health laws, and in directing all safety and health programs established by the Company.

-r- c. Delineate Company safety policy and procedures for specific tasks through publication of the CALAC Safety and Health manual, which includes procedures for safe transportation, handling and storage of ammunition and explosives, and related safety and health documents.

Note: All Company documents pertaining to occupational safety and health must have the prior written concurrence and approval of the Occupational Safety and Health Department.

d. Coordinate and direct both the Company's departmental safety training and safety certification training programs.

e. Exercise full authority to suspend any operation when violations of established safety and health procedures exist.

f. Establish use criteria and administer all aspects of the Company's personal protective program.

g. Monitor supervisory compliance with the standards issued under the applicable laws.

h. Assist affected organizations in seeking relief from standards considered to be impractical.

-r- i. Be responsible for directing occupational accident investigations.

-r- 2. Medical Department to

a. Provide necessary medical examinations in both the Company's hazardous exposure and certification programs.

b. Coordinate with the Occupational Safety and Health Department in identifying potential exposure problems as may be indicated by affected employees.

c. Serve as the necessary interface between outside medical facilities and the Company regarding information on specific employee injury or illness.

3. Human Resources Development Department to

a. Provide necessary safety training support as specified by the Occupational Safety and Health Department.

b. Coordinate the development of all safety-related training with the Occupational Safety and Health Department.

c. Notify the Occupational Safety and Health Department of any observed violation of safety rules or procedures.

4. Human Resources Palmdale (Safety Office) to

a. Administer plant program consistent with Company objectives as established by the Occupational Safety and Health Department.

b. Request appropriate support (i.e., instrumentation, testing and analysis) from the Occupational Safety and Health Department.

-r- B. Engineering & Development to

1. Design each Calac product to conform to, and perform in accordance with, applicable safety and health standards.

2. Notify affected organizations of new or changed designs that affect compliance with applicable standards by other branches.

3. Comply with new/revised standards affecting product performance or design; request assistance of other Calac organizations as required.

4. Coordinate all safety-related activities with the Occupational Safety and Health Department.

C. Product Support to

1. Coordinate and obtain written concurrence from the Occupational Safety and Health Department for the occupational safety recommendations made in customer manuals and bulletins to insure compliance with applicable standards and regulations.

2. Bring to the attention of the Occupational Safety and Health Department uncorrected safety conditions to which Company employees are exposed when on field service.

D. Materiel to

-r- 1. Serve as the interface for the company with outside contractors and suppliers of hazardous material. Establish and maintain requirements for insuring that all purchased products and services comply with applicable safety and health regulations.

2. Coordinate with the Occupational Safety and Health Department in implementing industrial vehicle and fleet safety programs.

3. Insure that bulk hazardous materials are received, stored, and handled per requirements of the Occupational Safety and Health Department.

-a- 4. Furnish the Occupational Safety and Health Department with a copy of all purchase orders for the procurement of explosives. Notify Occupational Safety and Health Department of any such items to be procured for which there are no safety rules or regulations.

E. All Organizations to

1. Comply with occupational safety and health programs established by the Occupational Safety and Health Department.

2. Request assistance of the Occupational Safety and Health Department in seeking relief from standards considered to be impractical.

3. Obtain written concurrence and approval of the Occupational Safety and Health Department of all safety and health related documents issued and updated by their organization.

4. Correct all known safety and health standards.

III. DISCIPLINE

Violations by any employee of good safety or health practices as established by the Occupational Safety and Health Department will be considered grounds for appropriate disciplinary action, including dismissal.

References

MPS 55 - Safety of Products and Services
MPS 169 - Occupational Safety and Health
GP 32 - Hazardous Materials Control Program
GP 33 - Control and Use of Lifting Equipment

R. R. Heppe
President
Lockheed-California Company

-a- Added
-r- Revised

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# MANAGEMENT DIRECTIVE

NUMBER: 167

FIRST ISSUED: 2-13-78

*REVISED: 4-13-87

ENVIRONMENTAL PROTECTION

I. It is the policy of the Lockheed-California Company to

A. Control all phases of our operations to ensure compliance with environmental standards and regulations.

B. Comply with the spirit and intent of federal, state and local laws, regulations and ordinances and seek relief only when unusual operating circumstances make it necessary.

II. Responsibility is assigned to

A. Facilities Engineering (Director of Environmental Affairs), to

1. Direct Calac environmental affairs to assure compliance with federal, state and local laws, regulations and ordinances relating to the protection of the environment.

2. Represent Calac before all federal, state and local environmental protection organizations. Serve as the official company representative for regulatory agency site inspections and visits.

3. Represent Calac in coordination of environmental activity with Corlac, other divisions and the aerospace industry. Advise Corlac when significant violations of environmental laws, regulations or standards occur. Assist Corlac in developing long range environmental plans addressing Calac operations.

4. Assist all branches in complying with applicable laws, regulations and ordinances relating to environmental protection. Advise branches as to specific environmental training requirements, and assist in conducting essential training.

5. Report instances of non-compliance in environmental issues to the responsible agencies as required by law, regulation or permit conditions.

6. Determine the need for a full time or part time Site Environmental Coordinator.

7. Maintain with the assistance of Public Relations and Division Counsel, cognizance of all current, new and/or revised laws, regulations, and ordinances and review for impact; notify the Vice President and General Manager - Engineering and Development of requirements affecting product performance or design; notify other organizations as required.

8. Evaluate, with the assistance of Division Counsel and Public Relations, proposed environmental protection legislation and develop an appropriate company position.

9. Monitor compliance with applicable laws, regulations and ordinances and maintain, as necessary, records to verify such compliance. Control and regulate compliance by conducting periodic physical inspections of facilities to assure that all branch operations are in compliance with applicable environmental regulations; issue notices of required correction to those division managers with noncompliant operations and follow up to assure timely compliance. Elevate repeat problems of noncompliant operations to whatever level necessary to assure Calac is in compliance with all environmental laws, regulations and ordinances.

10. Obtain pollution control permits necessary for operations. Prepare and issue reports as required by the various regulatory agencies.

11. Control by approval/disapproval signature any proposal by an operating branch to divert funds approved for environmental projects to other purposes.

12. Review proposed changes in industrial processes or site facilities which could impact environmental compliance.

B. Division Counsel to

1. Maintain cognizance of all federal, state and local laws, regulations and ordinances relative to environmental control.

2. Provide legal representation to the Director of Environmental Affairs in hearings, litigation, appeals or appearances before legislative bodies, committees or boards duly chartered under environmental protection agencies.

3. Advise Director of Environmental Affairs of the legal interpretation of proposed environmental protection legislation.

C. Public Relations to

1. Advise the President on all matters involving contact with regulatory agencies, the media, other industry groups, and legislative bodies.

D. Engineering & Development to

1. Director of Engineering Technology

a. Provide technical support to the Director of Environmental Affairs on engineering, material, and process alternatives for compliance with current and emerging environmental regulations.

b. Incorporate technical compliance requirements into applicable engineering control documentation.

2. Director of Engineering Test and Evaluation

a. Comply with the requirements of II.E.1-3 with respect to the Engineering Development Shops Divisions, the Engineering Lab Division and Palmdale Flight and Structural Test Services.

E. Manufacturing to

1. Incorporate environmental protection requirements into manufacturing process documents, utilizing data from applicable engineering process specifications.

2. Monitor manufacturing operations to ensure compliance with manufacturing process documents.

3. Conduct triannual audits of manufacturing operations to verify adherence to hazardous waste handling and disposal procedures. Submit audit reports to the Director of Environmental Affairs.

F. Product Support to

1. Comply with the requirements of II.E.1-3 with respect to the Overhaul and Repair Department.

G. Product Assurance to

1. Comply with the requirements of II.E. 1-3 with respect to applicable Quality Assurance operations.

0830

H. Advanced Development Project to

1. Assume responsibility in ADP areas for those functions defined in Sections D and E.

I. Materiel (Materiel Control and Logistics Services) to

1. Develop and manage a system which efficiently picks up, transports and disposes of all Calac containerized waste to comply with all environmental compliance regulations.

J. Human Resources to

1. Develop training courses to acquaint employees with environmental laws affecting operations for which they are responsible.

K. Security to

1. Establish emergency response procedures/training for each Calac facility to mitigate the impact of emergency conditions on employees and the environment.

L. All Affected Organizations to

1. Review all capital requests for manufacturing facilities or processes with the Director of Environmental Affairs to ensure that such requests incorporate adequate provisions for environmental protection. This review shall be done prior to the President's approval of the annual Fixed Asset budget.

Reference Documents

MPS 173 - Environmental Protection
CGP 41 - Hazardous Waste Management Program

R. R. Heppe
President
Lockheed-California Company

*Complete Revision

LOCKHEED – CALIFORNIA COMPANY
A Division of Lockheed Corporation

# MANAGEMENT DIRECTIVE

NUMBER: 174

FIRST ISSUED: 7-13-81

REVISED:

FIRE PROTECTION AND CONTROL

I. It is the policy of the Lockheed-California Company to

Continually provide its plants and facilities with protection against fire and related hazards and to take corrective action based upon inspection findings.

II. Responsibility is assigned to

A. The Calac Fire Chiefs at Burbank and Palmdale, acting as the Company's Fire Protection and Control Administrators, to

1. Plan and direct the activities of the Calac Fire Organizations in fire prevention and suppression to protect against loss of life, bodily injuries or property damage due to fire.

2. Develop Company fire protection standards.

3. Approve all major facility plans for construction, remodeling and demolition to assure compliance with existing fire and life safety codes, ordinances and requirements.

4. Develop and carry out an aggressive fire prevention awareness program including positive inspection and monitoring activities.

5. Exercise full authority to suspend any operation when violations of established fire standards exist.

6. Secure necessary assistance and advice from governing agencies and the Occupational Safety and Health Department.

7. Prepare periodic reports to the Chairman of the Calac Disaster Prevention and Safety Committee.

8. Work with all affected organizations in the development and implementation of fire prevention plans and fire safety training programs.

B. Facilities Engineering Organizations to

1. Coordinate with Calac Fire Chiefs in all matters pertaining to fire safety.

II. B. 2. Submit all major plans for construction, remodeling and demolition for Fire Department approval to assure full compliance with existing fire and life safety codes, ordinances and requirements.

C. Training Organizations to

Coordinate with Calac Fire Chiefs in implementing fire safety training programs.

D. Medical Organizations to

Coordinate with Calac Fire Chiefs in providing emergency medical care for sick and/or injured employees.

E. All Organizations to

1. Comply with fire safety programs established by the Fire Organizations.

2. Request advice and assistance of the Fire Organizations to assure fire-safe conditions in all work areas.

3. Obtain written concurrence and approval of the Fire Organizations of all fire safety related documents issued and updated by their organization.

4. Correct all known unsafe conditions.

5. Indoctrinate employees with paths of building exits to be used in case of fire.

6. Assist the Fire Protection and Control Administrators, Facilities Engineering and Training Organizations in the development and implementation of fire prevention awareness and training programs.

III. Discipline

Frequent or willful violations by any employee of good fire safety practices as established by the Fire Chiefs will be considered grounds for appropriate disciplinary action, including dismissal.

G. S. Kupple

for E. M. Cortright
President
Lockheed-California Company

# Safety & Health Manual

**BULLETIN NO.:** A-1
**REVISION:** E
**DATE:** February 1987


## SUBJECT: OCCUPATIONAL SAFETY AND HEALTH DEPARTMENT

The prime responsibility for the Calac safety and health program belongs to the Safety and Health Department (reference Management Directive No. 166).

The duties and responsibilities of the Safety and Health Department include:

1. Formulating, administering, and revising, when necessary, the company accident prevention program.

2. Serving in a regulatory capacity in all matters pertaining to safety and health, as required, for the guidance of management and employees.

3. Submission of regular periodic reports to management, relating to the status of the safety and health program.

4. Maintenance of the accident record system, making necessary reports, investigation of accidents, securing supervisor's accident reports, and verifying corrective action taken by supervisors to eliminate causes of accidents.

5. Supervising inspections by special management and employee committees, for the purpose of discovering and correcting unsafe conditions and/or unsafe work practices.

6. Maintaining outside professional contacts by which information may be exchanged and the program kept up to date.

7. Ensuring that Federal, State, and Local laws, ordinances, or orders bearing on safety are complied with, and procuring of required licenses and permits. Coordinating inspections and surveys made by governing agencies.

8. Securing necessary assistance or advice from governing agencies and insurance companies in matters relating to safety and health.

9. Initiation of activities that will stimulate and maintain the interest of employees in safety and health.

10. Assisting the Fire Department in the control of fire prevention activities.

11. Coordinating with outlying Calac plants on matters pertaining to the overall company safety and health program.

12. Coordinating safety and health matters with other divisions of the Corporation.

13. Maintaining and operating the Safety Appliance Crib for the issuance of approved safety equipment. Specifying and furnishing appropriate types of personal protective equipment.

14. Approving design, procurement, and layout of machinery processes, buildings, and equipment.

15. Monitoring environmental health hazards of exposure to toxic materials, dust, fumes, gases, and radioactive substances and applying appropriate industrial hygiene practices to keep exposures within safe limits.

16. Directing activity of the Hazardous Materials Control Plan.

**SUPPORT FUNCTIONS**

1. Inspections

   All areas are routinely inspected depending on the hazards involved. For special situations, new equipment, or environmental changes, special safety or health inspections can be made on request.

2. Departmental Safety Meetings

   We can participate in departmental meetings in many capacities.

3. Technical Assistance

   We have specialists in all areas of safety and health to answer your questions.

4. Accident Investigation

   Major accidents will be thoroughly investigated by the Safety and Health Department Personnel.

5. Prescription Safety Glasses

   Employees may purchase AT COST attractive industrial safety glasses through the Safety Crib at Plant B-1, Building 147, or at most medical units.

# Safety & Health Manual



6. Personal Protective Equipment

   We offer a complete line of equipment for protection from environmental hazards. See Sections P through MP (blue and yellow tabs in this Manual) for descriptions and applications.

**TELEPHONE NUMBERS**

Burbank: 7-3091

Palmdale: 124-2420

Safety Crib: 7-6030

**BULLETIN NO.:** B-2
**REVISION:** C
**DATE:** February 1987


## SUBJECT: TRAINING — AUDIOVISUAL SAFETY PROGRAMS

The Calac Training Department provides safety programs utilizing audiovisual presentations for use at safety meetings.

These programs are designed to assist the supervisor in making his immediate employees more aware of the hazards encountered at home and on the job. Each program includes a discussion guide and quiz sheet checklist to ensure student participation.

The following list describes the programs currently available:

1. **Safety at Calac - CCTV - 14 minutes.** — Gives an overview of various safety activities conducted by Calac, such as maintaining a safe work environment, establishing safe working procedures and safety regulations, providing protective equipment and medical attention, coordinating the various safety committees, and conducting safety training. The necessity of each employee being responsible for safety and maintaining an attitude of *safety awareness* is emphasized throughout the program.

2. **Slips and Falls - CCTV - 13 minutes.** — Discusses typical slips and falls accidents caused by poor housekeeping, use of wrong equipment, uncontrolled body momentum, wrong footwear, and not paying attention. Emphasis is also placed on safe working habits and accident causes.

3. **Materials Handling - CCTV - 12 minutes.** — Everyone, either as his sole duty or as part of his work, moves something from one place to another. Many injuries result from material handling. This program points out the dangers of:

   - Improper lifting
   - Lack of attention
   - Heavy loads
   - Improper loading
   - Overloaded tote pans
   - Unblocked vehicles
   - Weak containers
   - Improper storage
   - Improper operation of vehicles
   - Poor stacking

   This program points out many of the dangers of lifting and loading containers and vehicles, storage, and stacking.

4. **Hazardous Materials Handling - CCTV - 18 minutes.** — This program deals with hazardous materials and the placards and decals used to identify them. Chemicals, flammables, and explosives are labeled.

5. **Manual Lifting - CCTV - 12 minutes.** — This program covers the lifting problems from early caveman to present day problems. It discusses the construction of the spine and what happens when injured. Proper lifting techniques are illustrated and explained.

6. **Chemical Processing Safety - CCTV - 11 minutes.** — Reviews and emphasizes special hazards that are present in chemical processing areas. Included in the program are:

   - Hazards of various chemicals and chemical processes
   - Safety precautions to be observed in chemical processing areas
   - Protective equipment required

7. **Oxygen Handling Safety - CCTV - 12 minutes.** — Discusses the hazards of oxygen in both liquid and gaseous forms and the proper handling procedures necessary to safely handle it. Designed specifically for employees exposed to these hazards, such as welders, plumbers, and maintenance men.

8. **Handling of High Pressure Cylinders - CCTV - 16 minutes.** — This program was developed through the combined efforts of the Facilities Engineering, Safety, and Training Departments. It explains the hazards involved in moving and working with pressurized cylinders, and stresses required safety precautions and proper handling procedures.

9. **L-1011 Flight Line Safety - CCTV - 15 minutes.** — This program is designed to increase employee awareness of hazards encountered on a flight line. Items covered include:

   - Safety hazards related to aircraft systems such as hydraulic, electrical, radar, and moving parts such as doors and control surfaces
   - Safety hazards around jacked up aircraft
   - Safety hazards during engine runups and aircraft taxi operations
   - Fire hazards encountered on the flight line

10. **Workstand Safety - CCTV - 19 minutes.** — Explains correct methods of using workstands safely. Shows the hazards caused by incorrect or careless use of workstands and ladders.

11. **Static Grounding - CCTV - 16 minutes.** — Explains what static electricity is, and the problems that can develop when it is not properly controlled in the shop and on the flight line. The methods and procedures to follow as established in the applicable Calac standards are discussed.

12. **Sheet Metal Fabrication - CCTV - 25 minutes.** — Reviews the serious consequences which result in the improper use of various kinds of sheet metal fabricating machinery. Also discussed are the correct safety procedures for using drophammers, tablesaws, bandsaws, punch presses, power brakes, stretch presses, routers, and belt sanders.

13. **It's Up to You - CCTV - 15 minutes.** — A most thought-provoking emphasis on the importance of wearing eye protection around metal cutting machinery. Follows an employee from the time he gets a metal sliver in his eye to the hospital and shows the actual operation of removing the chip.

14. **Working Safely with Pressure Systems - CCTV - 15 minutes.** — This program covers the hazards which are present around pressurized systems, both pneumatic and hydraulic. It is of particular interest to maintenance personnel. A short true-false quiz is used to emphasize the main points.

15. **Office Safety - CCTV - 15 minutes.** — This program describes hazards associated with the office environment. Included are illustrations of the following hazards:

    - Tripping
    - File Cabinets
    - Hot Liquids
    - Smoking
    - Lifting
    - Storage
    - Chairs

16. **Machine Shop Safety - CCTV - 13 minutes.** — This program reviews hazards associated with shop operations. It illustrates accidents caused by such things as:

    - Lack of eye protection
    - Careless handling of sharp cutting tools
    - Failure to remove chuck keys before starting machine
    - Poor housekeeping and dress
    - Improper lifting techniques
    - Unsafe use of compressed air
    - Unsafe clamping during drilling operations

    The proper corrective actions for these and other unsafe practices are emphasized in the program.

17. **Solvent Safety - Safety - CCTV - 9 minutes.** — This program reviews major and minor problems associated with the wide-spread use of solvents and available personal protective equipment to guard against absorption and inhalation. Established handling and storing procedures are also shown.

    A true-false Solvent Safety Quiz accompanies the program.

18. **Respiratory Protection for Painters - CCTV - 16 minutes.** — This program discusses the need for respiratory devices, and describes the types used at Lockheed. Proper procedures for fitting, using, and cleaning these devices are presented in detail.

19. **Asbestos - CCTV - 16 minutes.** — A dramatic statement on the dangers of asbestos. Major topics are:

    - Discovery and history of asbestos
    - Types and uses
    - Dangers of asbestos
    - Precautions to be taken
    - Lockheed's involvement

    Dr. Barron of Lockheed provides emphasis on the hazards of this material.

20. **Skin Care - CCTV - 15 minutes.** — The subject is skin disease, with prevention the main consideration cleanliness is emphasized by the presentation of proper hand washing methods and the application of hand creams. The use of gloves and protective clothing is also discussed. A statement by Dr. Barron of Lockheed concludes the program.

21. **Noise - CCTV - 16 minutes.** — This program illustrates the structure and workings of the inner ear and describes the various devices used to reduce exposure to noise.

22. **The Unplanned - CCTV - 19-1/2 minutes.** — This film illustrates the result of a series of seemingly harmless acts which add up to an accident. It is designed to prevent the needless accidents which are caused by a series of *little things* - leaving litter on the floor to clean up *later*, leaving a machine unguarded *just this once*, etc.

23. **Flammable Liquid Fire Safety - CCTV - 18 minutes.** — This film illustrates the hazards of low flash point liquids and details correct methods of using, storing, and transporting flammable liquids.

24. **You Bet My Life - CCTV - 16 minutes.** — A dramatic presentation showing hazards to those who fly the aircraft when dropped rivets, screws, washers, and tools are not retrieved during assembly and repair of aircraft.

25. **A New Way to Lift - CCTV - 10 minutes.** — A new technique for any lifting situation. Whether you're lifting a carton, a drum, a sack - anything - six basic steps are demonstrated.

26. **A Breath of Air - CCTV - 10 minutes.** — This film covers the basic elements of a respiratory protection program; selection, training, fit, and maintenance.

27. **Scooter Safety - CCTV - 12 minutes.** — General scooter safety, both in plant and on the road, is illustrated. This is an excellent introductory program for the new scooter driver, as well as, a timely review for the seasoned driver.

28. **General Plant Safety - CCTV - 16 minutes.** — The most commonly found plant safety problems (running, wearing apparel, lifting, etc.) are shown. The film is particularly interesting because it was filmed on-site with Calac employees.

29. **Backfire - CCTV - 15 minutes.** — This film is designed to motivate employees to perform their jobs without risking a back injury. Covers correct lifting and carrying and general back health while pointing out the consequences of improper lifting and carrying.

30. **Mind Your Back - CCTV - 18 minutes.** — Back care involves more than just good lifting techniques. Good posture and sitting habits must be employed, as well. This film looks at bad habits, both at work and at home, involving lifting, twisting, bending, and shows how a person can develop good back care habits.

31. **The Sound of Sound - CCTV - 17 minutes.** — This film focuses on industrial noise, its constant attack on hearing, and the permanence of a noise-related hearing loss. Stresses that in order to keep the hearing you have, you must wear proper hearing-protection devices.

32. **Accident Report - CCTV - 15 minutes.** — A safety attitudes film that examines the various factors that cause accidents. Designed to make workers aware of the consequences of unsafe attitudes and unsafe behavior on the job. The importance of personal responsibility for their own safety is stressed.

33. **Fools Rush In - CCTV - 18.5 minutes.** — This program stresses the importance of proper preparation before entering a confined space. The equipment needed, such as respirators, life line, etc. Also, the need for standby personnel outside the confined space and emergency procedures.

34. **It's Up to You (Hearing Protection) - CCTV - 16 minutes.** — This program takes the viewer inside the ear to demonstrate the effectiveness of various types of hearing-protection devices and stresses the importance of wearing protectors that fit. Also demonstrates the proper way to fit the E.A.R. insert.

35. **General Industrial Safety - CCTV - 23 minutes.** — As the title implies, this cassette touches on many of the hazards faced in the workplace and proper methods of dealing with them. However, there are several bad practices shown - see if you can spot them.

36. **Personal Safety - CCTV - 17 minutes.** — Personal protective equipment is the theme of this tape. The proper choice of gloves, safety glasses, and other gear is stressed. But be on guard - there are some not-so-proper practices...see if you can spot them.

37. **Anatomy of a Fall - CCTV - 15 minutes.** — There are many reasons why people slip and/or fall. Disregard for safety rules, carelessness, hurrying, etc. This program covers these and other causes and points out faulty attitudes that cause these accidents.

38. **Packaging and Handling - CCTV - 30 minutes.** — Radio and television personality Gary Owens takes us on a journey through the storage area and flight line to show us how to "antique" electronic avionic parts while handling, transporting, and storing these delicate instruments.

39. **Ten Fingers, Two Hands - CCTV - 11.5 minutes.** — Injury and chemical burns can do terrible damage to our hands and fingers. This cassette demonstrates the right and the wrong way to use our hands in hazardous situations. (Some graphic scenes.)

40. **Floor Operated Forklift - CCTV - 14 minutes.** — This motorized unit is a powerful tool. Knowing your equipment and how to operate it is demonstrated. Proper loading, lifting, stacking, unstacking, and how to travel. Good general operating techniques and general safety procedures are demonstrated.

41. **Be Aware - CCTV - 13 minutes.** — Alertness to the hazards of chemicals and vapors is the theme of this program. Proper labeling and handling of these substances is stressed.

42. **To Your Health - CCTV - 14 minutes.** — Defines Industrial Hygiene terms and explains the basics of Industrial Hygiene to workers. It motivates worker to cooperate with the sampling and monitoring activities of the Industrial Hygienist.

43. **What You Don't Know Can Hurt You - CCTV - 22 minutes.** — The film introduces us to basic principles of toxicology, the science of hazardous chemicals, and their effects on people. The program helps employees understand and interpret Material Safety Data Sheets (MSDS).

The following list of CCTV programs are currently available without description:

1. **Chemical Handling - 17 minutes.**

2. **Death in the West (Smoking) - 25 minutes.**

3. **Fire & Extinguishers - 16 minutes.**
4. **First-Aid Fire Extinguishers - 17 minutes.**
5. **Hazardous Material Handling - 18 minutes.**
6. **Helping Hands (Hand Safety) - 15 minutes.**
7. **Less Than A Minute (E-A-R Plug Usage) - 6 minutes.**
8. **Listen Up With Norm Crosby (Noise) - 17 minutes.**
9. **MEK (Methyl Ethyl Ketone) - 7 minutes.**
10. **MSDS (Material Data Safety Sheet) - 32 minutes.**
11. **Nice to Hear - 10 minutes.**
12. **Safety & Housekeeping Go Hand in Hand - 13 minutes.**
13. **S.O.S. (Hearing) - 12 minutes.**
14. **S-3A Flight-Line Safety - 18 minutes.**
15. **The National Hearing Quiz (Noise) - 26 minutes.**
16. **The Point of No Return, Part A. (Slips & Falls - Walk Carefully) - 12 minutes.**
17. **The Point of No Return, Part B. (Slips & Falls - Proper Use of Equipment) - 13 minutes.**
18. **Working Safely with Overhead Cranes - 12 minutes.**
19. **Survival Guide - 30 minutes.**

To schedule the use of these programs, contact the Safety Training Coordinator at extension 7-3813.

| SUBJECT: | BULLETIN NO. |
|---|---|
| HAZARDOUS MATERIALS SAFETY TRAINING | B-7 |
| | DATE October 1981 |

## SCOPE

Many Calac employees handle and/or use hazardous materials on a regular basis. These materials expose those employees to a wide range of hazardous physical properties such as corrosives, acids, caustics, flammable liquids, dusts and solids, toxic materials, radiation, and even potential carcinogens.

## DEFINITION

Hazardous Material. – A material is considered hazardous if it contains materials which are toxic, poisonous, reactive, flammable, carcinogen, corrosive to human tissue, acidic, or caustic.

## PROGRAM

The key element in our hazardous materials program is an informed work force fully aware of the potential hazards as well as the necessary protective measures. All of these materials can be handled and used safely if the workers know and follow common sense precautions.

1. The key element in worker training is the Material Safety Data Sheet (MSDS). This MSDS is an eight-part form, provided to Calac by the manufacturer, which lists the necessary safety and health information (refer to Bulletin C-10).

2. The Safety and Health Department is responsible to request from the using departments a list of hazardous materials used.

3. The using department shall submit, upon request of the Safety and Health Department, a complete list of the hazardous materials used listing the manufacturer (name, complete address, and telephone number), material name, manufacturers identification, Lockheed EPS number, any other identification, use of the material (cleaner, stripper, etc.) and place or places of use (building, plant, etc.).

4. The Safety and Health Department shall:

   - Request the MSDS from the manufacturer.
   - Receive and review all MSDSs for completeness and adequacy.
   - Keep a master file of all MSDSs, by manufacturer, and supply copies of all requested MSDSs to the using department. They shall also submit a copy of all MSDSs to the Training Department.

5. The using departments shall:

   - Maintain a file of all MSDSs used in their department for review by all interested parties.

   - Using the supplied MSDSs, ensure that each employee using any of this material is trained so that he or she fully understands the hazards and knows how to protect his or herself.

6. The Training Department shall develop a training curriculum based on the MSDSs supplied to them, and train those employees in the specific hazardous materials as requested by the using departments.

RECORDS

It is essential that this training effort be substantiated by accurate records. Both the Training Department and the using department shall keep records of all training by employee, subject, and date.

| SUBJECT: | BULLETIN NO. |
|---|---|
| LABELS (CHEMICAL CONTAINERS) | C-2 |
| | DATE October 1981 |

Identification of hazardous material containers is vitally important to the safe storage, use, and handling of chemicals.

Labeling requirements are specified in various governing regulations and standards. The wording of typical labels are depicted in the chemical bulletins. Suppliers' labels containing equivalent information are acceptable.

Labels are available from the Safety and Health Department. The following precautions must be taken:

1. When labels are affixed to containers, means of protecting the label must be utilized. (Application of a clear polyurethane coating will protect the edges of the supplied labels against the effects of moisture and other chemical deteriorants.)

2. Worn or illegible labels shall be replaced as necessary.

3. Labels shall not be removed from containers as long as any of the substances named on the labels remain in the container.

4. No substances, other than those that were in the container when first received shall be placed in the containers so long as the original label remains on the can.

5. Labels shall be affixed to the sides of drums.

**BULLETIN NO.:** C-3
**REVISION:** C
**DATE:** February 1987


## SUBJECT: STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS

The wide variety of flammable and combustible liquids used throughout our operations necessitates that proper consideration be given to storage and handling of these chemicals. In the event of ruptured containers due to mishandling, improper stacking, severe vibration, corrosion, or overheating, or of accidental mixing of the chemicals, severe fire and health hazards can result.

### DEFINITIONS

1. **Flammable Liquids.** — Those liquids having a flash point below 100°F (37.8°C) and having a vapor pressure not exceeding 40 psia at 100°F.

2. **Combustible Liquids.** — Those liquids having a flash point at or above 100°F (37.8°C).

### STORAGE

1. Storage areas must be kept free of nonessential combustible materials such as paper, rags, packing materials, and vegetation.

2. Flammable and combustible liquids must be separated from oxidizers and corrosive liquids in storage.

3. Flammable materials shall be stored in roofed storage areas where they will be protected from direct sunlight.

4. Drums containing flammable liquids shall not be stored where they are exposed to heat sufficient to rupture the containers. Storage near heating equipment is to be avoided.

5. Containers shall be palletized in storage to prevent corrosion or deterioration from moisture accumulations under the containers.

6. Stacked drums shall be palletized to facilitate safe handling by forklift equipment.

7. Height of stacked drums shall not exceed three drums except for nitric acid drums which shall not be stacked over two drums in height. Other containers must be stacked so as to prevent collapse due to weight, shape, and construction of containers.

8. Less than drum size quantities may be stored in original shipping containers.

9. Unopened drums need not be grounded.

10. All storage areas shall be approved in advance by the Calac Fire Department and the Occupational Safety and Health Department.

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## HANDLING AND USE

1. Drums shall not be emptied by air pressure except as produced by hand pumps, bulbs, or approved dispensing pumps.

2. No open flame, torch, or similar source of heat shall be allowed to come within 30 feet of flammable or combustible liquids.

3. Drums must be grounded whenever they are opened and especially during transfer. An electrostatic bond that will bond the dispensing and receiving container shall be used.

4. Smaller metal containers must be bonded to main supply container prior to transfer of flammable liquids.

5. Only Underwriters Laboratory (UL) or Factory Mutual (FM) approved safety containers will be used for *less than drum* quantities of flammable liquids in factory work areas. Maximum safety container capacity is 11 gallons. Exceptions are:

   - Laboratories are permitted to utilize plastic containers of one pint maximum capacity and original containers from the manufacturer.

   - For same shift use, nonstandard containers of one pint maximum capacity will be permitted for benchwork operations.

6. Safety containers shall be kept in red "FLAMMABLES" cabinets when not in use in work area.

7. Cabinets shall be kept free of combustible materials such as paper, rags, packing materials, and friction spark-producing items such as steel bucking bars and tools, and incompatible materials such as oxidizers.

8. All containers shall be properly labeled in accordance with Bulletin C-2.

9. Open containers of flammable liquids shall be prohibited.

# Safety & Health Manual

**BULLETIN NO.:** C-4
**REVISION:** B
**DATE:** February 1987


## SUBJECT: SOLVENTS

### DEFINITION

Solvents are liquids that are added to other chemicals for the purpose of diluting and reducing the viscosity of the basic materials. Solvents are also used for cleaning purposes and removal of unwanted contaminants from solid surfaces.

### HAZARDS

1. Toxicity

   All solvents are toxic. Some are more toxic than others. By test, the threshold limit value (TLV) has been determined for most solvents. The thresholds are the highest values in which it is safe to work for a continuous eight-hour-exposure day. The higher the TLV, the safer the solvent.

   The ability to smell a solvent is not an effective means for judging its toxicity. A person can absorb an overdose of the solvent before detecting its presence by smell.

   Chlorinated hydrocarbons such as 1,1,1-trichloroethane, methylene chloride, and perchlorethylene generally are nonflammable at ordinary temperatures; but if a flame is applied, they will burn and break down into phosgene gas and hydrochloric acid, both of which are highly toxic. Therefore, exhaust ventilation and air-line respirators must be worn if welding is performed in the presence of such solvents. For the same reason personnel must not smoke in the presence of such chemicals.

2. Flammability

   Flammable solvents may give off vapors which when mixed with air will burn. Whether or not the mixture burns depends on the surrounding temperature and on the vapor concentration. It is useful to know some properties of flammable solvents, such as the flash point, the flammable (explosive) limits, and the ignition temperature.

   - **Flash Point.** — The minimum temperature at which a flammable liquid gives off vapor in sufficient concentration to form an ignitible mixture with air near the surface of the liquid.

   - **Flammable (Explosive) Limits.** — The range of concentrations (usually expressed in percent by volume) over which a flammable vapor or gas mixed with proper proportions of air will flash or explode if an ignition source is present. The lower percentage at which this occurs is the lower explosive limit, and the highest percentage the upper explosive limit. Those of gasoline are 1.3 percent to 6 percent (relatively narrow), and those of hydrogen are 4.1 percent to 74.2 percent (very wide). Mixtures below the lower explosive limit are too lean to burn while those above the upper explosive limit are too rich to burn.

- **Ignition Temperature.** — The minimum temperature to which a flammable vapor or gas mixture in air must be heated in order to initiate or cause self-sustained combustion. Ignition temperature can change substantially depending on vapor concentration, size and shape of the space containing the mixture, rate of heating, and presence of other materials. Questions concerning heating flammable solvents should be referred to the Safety and Health Department.

- **Spontaneous Combustion.** — Caused when certain kinds of flammable liquids combine with oxygen in the air at ordinary temperatures and give off heat. Solvent-soaked rags may produce heat faster than it can be dissipated. The temperature will rise and ignition may occur. Such rags should be kept in an airtight can.

Open containers, soaked rags, or spraying increase the fire hazard.

Use approved safety cans.

3. Problems relative to toxicity or fire hazards of solvents should be directed to the Safety and Health Department for evaluation.

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| SUBJECT: | BULLETIN NO. |
|---|---|
| ACIDS | C-5 |
| | DATE October 1981 |

Corrosive acids, like many other dangerous materials, are not a problem to health and safety as long as the safety rules for their use are known and followed.

It is essential that:

1. Full-length acid-resistant gloves, aprons, and face shields shall be worn while handling corrosive acids in the plant.

2. If acid splashes on the skin, wash immediately with copious quantities of clear cool water, then promptly report to a plant first aid unit for medical treatment.

3. High-pressure air from factory air lines must not be used to withdraw acid from any container. The risk of bursting is too great. The safest way to empty a glass carboy is to move the liquid with a rubber hand-squeeze bulb or a carboy inclinator.

4. Water must never be added to acid. Always pour acid into water.

5. When mixing corrosive acids either do it in a ventilated hood or wear adequate respiratory protection.

# Safety & Health Manual

**BULLETIN NO.:** C-6
**REVISION:** A
**DATE:** February 1987


**SUBJECT:** PLASTICS

## EPOXY RESIN SYSTEMS

1. The hardeners used in these systems are caustic and contact with skin must be avoided.

2. USE EYE PROTECTION DURING ALL MIXING OPERATIONS. In the event the catalyst comes in contact with the eyes, wash them thoroughly in clean water immediately as emergency treatment, and report to the plant hospital for further treatment.

3. Rubber gloves must be worn to protect the hands during mixing operations and during layup work.

4. Perform all mixing operations in the mixing booth whenever possible. Otherwise mixing must be performed in a well-ventilated area using a respirator. AVOID PROLONGED OR REPEATED BREATHING OF THE CATALYST VAPORS.

5. In the event the hardener comes in contact with your skin or clothing, wash thoroughly with clean water and soap immediately.

6. Inadvertent mixing of any of the epoxy hardeners with the peroxide-type catalysts used for the polyester resins such as D.D.M Lupersol, Uniperox, Garan Paste, Garox BXP, etc., may result in a violent explosive reaction.

7. Do not leave containers of resin and hardener open. The hardener vapors are toxic; the resin is a fire hazard.

8. Personal cleanliness is the most important measure in combating dermatitis. Unless absolutely necessary, do not use methyl ethyl ketone, acetone, or other solvents for removal of resin from the skin; these solvents remove the body oils that act as a natural barrier against dermatitis. Wash hands thoroughly prior to smoking, eating, etc. Do not use hardener-contaminated gloves, aprons, clothing, etc., without prior washing.

## PHENOLIC RESINS

1. USE EYE PROTECTION WHEN MIXING PHENOLIC RESINS BECAUSE OF THE ACID CONTENT OF THE CATALYST. In the event the catalyst comes in contact with the eyes, wash them thoroughly in clean water immediately as emergency treatment, and report to the plant hospital for further treatment.

2. Phenolics foam during the mixing and pouring stages and must be handled with suitable exhaust equipment for carrying off the formaldehyde vapors whenever possible; otherwise a well-ventilated area must be used for this work.

3. Avoid prolonged or repeated contact with the vapors during the mixing and pouring operations. Use a respirator when necessary.

4. Perform ALL sanding or grinding of cured phenolic resins using a respirator and whenever possible using suitable exhaust equipment.

5. Wear rubber gloves during mixing and pouring stages of phenolic resin handling.

**POLYESTER RESINS**

1. POLYESTER RESIN IS NOT TO BE USED WITHOUT SUPERVISORY APPROVAL.

2. Cobalt naphthenate is to be used only with supervisory approval. When cobalt naphthenate is used, it is imperative that it NEVER be mixed directly into the catalyst but diluted into the resin or styrene in order to prevent a violent explosive reaction resulting from the direct mixing of the catalyst and cobalt naphthenate.

3. USE EYE PROTECTION DURING ALL MIXING OPERATIONS. In the event the catalyst comes in contact with the eye, wash thoroughly in clean water immediately as emergency treatment, and report to the Plant Hospital for further treatment.

4. Catalysts used for polyester resins must never be mixed with those used for the epoxy resins because of the resultant explosive reaction.

5. No open containers of resin shall be left in the mixing booth because of the fire hazard.

6. Wear rubber gloves during all mixing operations.

It is evident from these safety precautions that the three major hazards exist in handling plastic materials are:

1. Fire and/or explosion hazards

2. Catalyst vapor and contact hazards

3. Dust hazards created by sanding and grinding

Almost all the resins, solvents, etc., used in our operations are highly flammable. No open flames, lighted cigarettes, or other sources of ignition are allowed within the "NO SMOKING" area.

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| SUBJECT: | BULLETIN NO. |
|---|---|
| RESTRICTED CHEMICALS | C-7 |
| | DATE October 1981 |

A standard has been published by the Occupational Safety and Health Administration that imposes specific controls for the use of certain chemicals. In addition, the Safety and Health Department restricts the use of certain chemicals.

The following listed chemicals, or compounds known to contain any of the chemicals, are not to be used at Calac without specific written approval of the Safety and Health Department.

RESTRICTED CHEMICALS*

1. 2-Acetylaminofluorene
2. 4-Aminodiphenyl
3. Benzidine (and its salts)
4. 3,3'-Dichlorobenzidine (and its salts)
5. 4-Dimethylaminoazobenzene
6. alpha-Naphthylamine
7. beta-Naphthylamine
8. 4-Nitrobiphenyl
9. N-Nitrosodimethylamine
10. beta-Propiolactone
11. bis-Chloromethyl ether
12. Methyl Chloromethyl ether
13. 4,4'-Methylene (bis)-2-chloroaniline
14. Ethyleneimine
15. Carbon Tetrachloride
16. Nickel Carbonyl
17. Vinyl Chloride
18. Toluene Diisocyanate (TDI)
19. Methylene Bisphenyl Isocyanate (MDI)
20. Benzene (Benzol)
21. Asbestos
22. Ethylene Dichloride
23. Trichloroethylene

If it is found that these chemicals or compounds containing these chemicals must be utilized, the using department shall request a Chemical Use Permit from the Safety and Health Department. The permit will contain the specific conditions under which the materials may be used. A copy of the permit is to be posted prominently in the work area. When finished parts containing any of these chemicals are procured for assembly only, and no rework, machining, or other processing is to be performed, the Safety and Health Department will waive the Chemical Use Permit requirement after evaluation of the proposed use.

**Refer to Bulletin C-8 for a list of known compounds that contain some of the restricted chemicals.*

| SUBJECT: RESTRICTED CHEMICAL COMPOUNDS | BULLETIN NO. C-8 |
|---|---|
| | DATE October 1981 |

1. The following chemical compounds are reported to contain chemicals listed in the referenced bulletin, and shall not be used at Calac without specific written approval (Chemical Use Permit) of the Occupational Safety and Health Department.

GROUP I

| Product | Manufacturer | Material Designation | E.P.S. No. |
|---|---|---|---|
| Uralane 5738 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane-Thixotropic | (S)30.2800 |
| U-141 | Stabond Corp. | Adhesive, Polyurethane-Thixotropic | (S)30.2800 |
| Uralane 5738A | Furane Plastics, Inc. | Adhesive, Polyurethane-Thixotropic | (S)30.2801 |
| Uralane 5738B* (*Number will vary to indicate color of pigment additive) | Furane Plastics, Inc. | Adhesive, Polyurethane-Thixotropic | (S)30.2801 |
| Uralane 5737 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane | (S)30.2802 |
| Uralane 8089 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane-Paste | (S)30.2804 |
| Uralane X-87174 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane-Clear | (S)30.2806 |
| Uralane 87146 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane-Nonflow | (S)30.2808 |
| Uralane 87424 A/B | Furane Plastics, Inc. | Adhesive, Polyurethane-Intermediate Cure (10 minute pot life) | (S)30.2814 |
| Hysol RU2013 | Hysol | Casting Systems, Polyurethane | ---- |
| Hysol TM18 | Hysol | Casting Systems, Polyurethane | ---- |
| Hysol TM32 | Hysol | Casting Systems, Polyurethane | ---- |
| Uralane 8615 | Furane Plastics, Inc. | Casting Systems, Polyurethane | ---- |

Acceptable substitutes have been found for items on the above list having the prefix (S) to the E.P.S. number. Departments using these materials should contact the Materials and Processes Department (75-74) for a current list of the substitute items.

2. The U.S. Consumer Product Safety Commission has recently lifted its ban on sales of the following aerosol spray adhesives. These commercial products are widely used by hobbyists, artists, and photographers to fix pieces of material to art works or designs, and to seal packages.

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| BULLETIN NO. |
| --- |
| C-8 |
| DATE |
| October 1981 |

GROUP II

| Product | Manufacturer |
| --- | --- |
| Foil Art Adhesive | Minnesota Mining and Manufacturing Co. |
| Scotch Brand Spray-Ment Adhesive | Minnesota Mining and Manufacturing Co. |
| Krylon Spray Adhesive | Borden, Inc. |
| 3 M Brand Spray Adhesive 77 | Minnesota Mining and Manufacturing Co. |
| Marshall's Photo-Mount Spray Adhesive | Borden, Inc. |
| Sears Multi-Purpose Spray Adhesive | Minnesota Mining and Manufacturing Co. |
| Scotch Brand Multipurpose Spray Adhesive | Minnesota Mining and Manufacturing Co. |
| Scotch-Grip Brand Floral Adhesive 77 | Minnesota Mining and Manufacturing Co. |
| 3 M Brand Shipping Mate Palletizing Adhesive | Minnesota Mining and Manufacturing Co. |
| 3 M Brand Spray Trim Adhesive | Minnesota Mining and Manufacturing Co. |
| Tuff-Bond Spray-Hesive | Minnesota Mining and Manufacturing Co. |
| Bear Brand Spray Trim Adhesive | Minnesota Mining and Manufacturing Co. |

| SUBJECT: | BULLETIN NO. |
|---|---|
| USE OF HAZARDOUS MATERIALS – REVIEW AND APPROVAL | C-9 |
| | DATE October 1981 |

The company's hazardous materials control program begins prior to actual use of the material in various plants. The program starts with a reveiw of the potential hazards by the Safety and Health Department. This review includes, but is not limited to, the area of use, the availability of engineering controls, the recommended personal protective equipment, and medical and training requirements.

In order to accomplish this review, it is necessary that all departments coordinate activities that involve the use of newly formulated or brand new hazardous materials with the Safety and Health Department. Part of this coordination is the submittal of applicable Material Safety Data Sheets (MSDSs) to the Safety and Health Department.

This coordination and review by the Safety and Health Department will also apply to activities of outside contractors where work is in proximity to, and where potential exposure problems exist with Lockheed employees.

It is the responsibility of the using departments to provide adequate time to the Safety and Health Department for this review. No operations will be allowed to begin without the full approval and concurrence of the Safety and Health Department.

# Safety & Health Manual

**BULLETIN NO.:** C-10
**REVISION:** F
**DATE:** June 1987


## SUBJECT: WRITTEN HAZARD COMMUNICATION PROGRAM

INTRODUCTION:

The Lockheed-California Company has developed a Hazard Communication Program to enhance our employees' health and safety.

As a company we intend to provide information about chemical hazards and other hazardous substances, and the control of hazards via our comprehensive Hazard Communication Program which includes container labeling, Material Safety Data Sheets (MSDS) and training.

The following program outlines how we will accomplish this objective.

1. Container Labeling

   It is the policy of this company that no original manufacturer's container of hazardous substances will be accepted and/or released for use until the following label information is verified:

   - Containers are clearly labeled as to the contents
   - Appropriate hazard warnings are noted
   - The name and address of the manufacturer are listed

   The responsibility for ensuring that the above requirements are followed is assigned to first line supervision of each receiving department. Supervision in each using department has equal responsibility.

   To further ensure that employees are aware of the hazards of materials used in their work areas, it is our policy to label all secondary containers.

   The first line supervisor in each section will ensure that all secondary containers are labeled with either an extra copy of the original manufacturer's label or with generic labels which have a block for identity and blocks for the hazard warnings.

   All printed labels are available from the Occupational Safety & Health Department (ext. 7-3091).

2. Material Safety Data Sheets (MSDSs)

   Copies of MSDSs for all hazardous substances to which department employees may be exposed are kept in an "MSDS" binder located in the department manager's office. The Occupational Safety & Health Department will be responsible for obtaining and maintaining the data sheet system for the company.

Occupational Safety & Health Department Personnel will review incoming data sheets for new and significant health/safety information. They will see that any new information is passed on to the affected employees.

Additionally, the MSDSs will be reviewed for completeness by Occupational Safety and Health Department Personnel. If an MSDS is obviously incomplete, a new MSDS will be requested from the manufacturer. OSHA will be notified if a complete MSDS is not received.

MSDSs shall be available to all employees in their work area for review during each work shift. It is the policy of the company that no work should proceed unless an MSDS is available and users trained regarding hazards and precautions. However, if MSDSs are not available or new hazardous substance(s) in use do not have an MSDS, employees should contact their supervisor or the Occupational Safety & Health Department immediately.

3. Employee Information and Training

Employees who handle any hazardous materials must have received the following:

1. **MSDS Phase I (Introduction)**

   General training class, "MSDS Training," CX7400 presented by the Training Department (ext. 7-5256).

2. **MSDS Phase II (Specific)**

   Specific, individual MSDS review by supervision. (Note: Technical support available to supervision from the Occupational Safety & Health Department.)

   This training must be repeated as often as necessary to ensure that employees are protected from hazardous exposures.

Together, Phases I and II provide employees the following:

- An overview of the requirements contained in the Hazard Communication Regulation, including their rights under the Regulation.
- Information on any operations in their work area where hazardous substances are present.
- Location and availability of the written hazard communication program.
- Physical and health effects of the hazardous substances.
- Methods and observation techniques used to determine the presence or release of hazardous substances in the work area.

- How to lessen or prevent exposure to hazardous substances through controlled work practices and personal protective equipment.
- Steps the company has taken to lessen or prevent exposure to these substances.
- Emergency and first aid procedures to follow if employees are exposed to hazardous substance(s).
- How to read labels and review MSDSs to obtain appropriate hazard information.

***NOTE:*** *It is critically important that all employees understand the training. If employees have any additional questions, they should contact their supervisor or the Occupational Safety & Health Department (ext. 7-3091).*

*When new hazardous substances are introduced, supervision must immediately review MSDS Phase I and II information with their employees.*

4. Hazardous Substance List

A "Hazardous Substance List," provided by the Occupational Safety & Health Department, is required to be posted in each work area. This listing provides employees with their workplace hazardous substance inventory and, therefore, denotes those MSDSs contained in the MSDS Binder located in their manager's office.

Each department manager must keep this list current. Any changes (additions, deletions, location, quantity) must be reported to the regulatory agencies — through the Occupational Safety & Health Department — within 30 calendar days.

5. Hazardous Non-Routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information by their supervisor about hazards to which they may be exposed during such an activity.

This information will include:

- Specific hazards.
- Protective/safety measures which must be utilized.
- Measures the company has taken to lessen the hazards including ventilation respirators, presence of another employee and emergency procedures.

6. Hazardous Substances in Unlabeled Pipes

   To ensure that employees who work on unlabeled pipes have been informed as to the hazardous substances contained within, the following policy has been established:

   Prior to starting work on unlabeled pipes, employees are to contact their supervisor for the following information:

   - The hazardous substance in the pipe.
   - Potential hazards.
   - Safety precautions which shall be taken.

7. Contractor Work

   To ensure that outside contractors work safely in all plants, it is the responsibility of the Field Engineer in Facilities Engineering to provide contractors the following information:

   - Hazardous substances to which they may be exposed while on the jobsite.
   - Precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

   ***NOTE:*** *Technical support available to Facilities Engineering and/or contractors from the Occupational Safety & Health Department.*

   In addition to protecting contractor personnel from exposure to Lockheed's hazardous substances, the company's policy is to ensure that hazardous substances used in contractor operations do not create exposure problems for Lockheed employees. Therefore, contractors must:

   - Review hazardous substances usage with the Lockheed-California Company Field Engineer.
   - The Field Engineer will implement appropriate controls, consistent with Lockheed-California Company safety policy.

   ***NOTE:*** *Technical support is available to the Field Engineer from the Occupational Safety & Health Department.*

   If anyone has questions about this plan, contact the Occupational Safety & Health Department (ext. 7-3091). Regular audits by this department will be conducted to ensure that policies are carried out and that the plan is effective.

| SUBJECT: FLASH POINTS | BULLETIN NO. C-11 |
|---|---|
| | DATE October 1981 |

A flash point is defined as the lowest temperature at which a liquid will give off enough flammable vapor at or near its surface in mixture with air and a spark or flame so that it ignites.

If the flash point, expressed as a temperature in degrees (listed below), is lower than the temperature of the ambient air, the vapors will ignite readily in air with a source of ignition. Those of higher temperature are relatively safer.

The following is a list of flammables commonly used at Lockheed.

| | Flashpoint Degrees Fahrenheit | Flashpoint Degrees Celsius |
|---|---|---|
| Acetone | 0 | -17.8 |
| Alcohol (Denatured) | 60 | 15.6 |
| Alcohol (Ethyl) | 55 | 12.8 |
| Alcohol (Methyl, Methonol, Wood) | 54 | 12.2 |
| Alcohol (Isopropyl) | 53 | 11.7 |
| Benzine (Petroleum Ether) | <50 | <-46.0 |
| Benzol (Benzene) | 12 | -11.1 |
| Diluent A | -10 | -23.0 |
| Ethyl Acetate | 24 | -4.4 |
| Ethyl Ether | -49 | -45. |
| Fuel, Jet A | 95 – 145 | 35.0 – 62.8 |
| Fuel, JP-4 | -10 | -23.0 |
| Fuel, JP-5 | 95 – 145 | 35.0 – 62.8 |
| Fuel Oil | 100 | 37.8 |
| Gasoline | -45 | -42.8 |
| Kerosene | 100 – 165 | +37.8 – +73.9 |
| K.U.L. | 120 | 48.9 |
| Lacquer | 0 – 80 | -17.8 – +26.7 |
| Lacquer Thinner | 40 | 4.4 |
| Methyl Cellosolve Acetate - (MCA) | 132 | 55.6 |
| Methyl Ethyl Ketone (MEK) | 30 | -1.1 |
| Methyl Iso-Butyl Ketone - (MIBK) | 73 | 22.8 |
| Mineral Spirits - (Turpentine Subst.) | 85 | 29.4 |
| Naphtha VM&P | 20 – 45 | -6.7 – +7.2 |
| Naphtha, Petroleum Ether | <0 | <-17.8 |
| Paint, Liquid | 0 – 80 | -17.8 – +26.7 |
| Shell 40 | 140 | 60.0 |
| Stoddard Solvent | 100 – 110 | 37.8 – 43.3 |
| Styrene | 90 | 32.2 |
| Thinner (Wash) | 20 | -6.7 |
| Toluol (Toluene) | 40 | 4.4 |
| Turpentine | 95 | 35.0 |
| Varnish | 10 – 80 | -12.2 – +26.7 |
| Xylene | 63 | 17.2 |

*Refer to Bulletin C-3, "Storage and Handling of Flammable and Combustible Liquids."*

# Safety & Health Manual

**BULLETIN NO.:** C-12
**REVISION:** D
**DATE:** February 1987


## SUBJECT: USE OF INDUSTRIAL SOLVENTS

This Safety and Health Bulletin outlines the general safety precautions that are required when using solvents for hand solvent wiping, brushing, spraying, solvent vapor degreasing, and sonic cleaning.

### STORAGE

1. Storage areas must be kept clean and free from trash and combustibles.

2. All leaks and spills must be flushed away at once with large amounts of water. The storage areas shall be inspected daily, and the safety regulations governing the use of flammable solvents shall be strictly enforced by the supervisor in charge.

3. All solvents in less than drum quantities must be stored in approved cabinets and dispensed from proper containers. Solvents stored in drum quantities should be kept in an approved drum storage area. An adequate water supply with hose bibs and hoses must be available for fighting fires and the wash down of spills.

### HANDLING

1. All employees handling and using solvents must be instructed in the nature and characteristics of the solvents by their immediate supervision.

2. In areas where the concentration of the vapors may go above the threshold limit value, all personnel must wear approved respiratory equipment.

3. Smoking and flame or spark producing devices are not permitted within 30 feet of the storage area of flammable solvents.

### GENERAL PRECAUTIONS

1. Handling and storage of all flammable solvents with flash points below 100° F must be approved by the Safety and Health Department.

   - Solvents must not be used from open containers such as bread pans. Only Underwriters Laboratories (UL) or Factory Mutual (FM) approved cans, tanks, or washers shall be used.

   - Solvents must be stored in UL or FM approved safety cans. When not in use, cans must be stored in cabinets specifically designed for storage of flammable materials. Said cabinets shall be used when storing more than 10 gallons up to 120 gallons of flammable or combustible liquid.

   - Where solvents are dispensed from drums, UL or FM approved self-closing faucets and vents or transfer pumps must be used. Gravity dispensing of flammable or combustible solvents from a tank, barrel, drum, or similar container is prohibited.

- An approved, static ground wire system shall be employed on all drums or tanks used for flammable solvent dispensing.

- Flammable and other volatile solvents must not be stored in the direct sun or in heated areas.

- Horizontal storage of drums, barrels, or similar containers of flammable or combustible solvents is prohibited.

2. The preferred solvent for wiping or brushing by hand is inhibited methyl chloroform (1,1,1, Trichloroethane). This solvent is nonflammable and has relatively low toxicity, and high solvent power.

   - Good, general ventilation must be available where this solvent is used. Prolonged breathing of the vapors must be avoided. If used in confined spaces, respirators approved for that use by the Safety and Health Department must be used.

   - Prolonged or repeated skin contact with this solvent must be avoided due to the defatting action on the skin.

3. Hand solvent cleaning with MEK, acetone, lacquer thinner, naphtha, and other similar flammable solvents must be eliminated whenever possible. Where they must be used, the following precautions must be followed:

   - Prolonged breathing of vapors must be avoided.

     — Intermittent operation may be performed where good, general ventilation is available. Where good, general ventilation is not available, respiratory protection approved by the Safety and Health Department shall be used.

     — Production type work shall be done with local exhaust ventilation approved by the Safety and Health Department.

   - Prolonged or repeated contact with skin must be avoided.

     — Impervious gloves suitable for the solvent involved shall be worn to avoid prolonged and repeated hand exposure.

     — Solvent soaked clothing shall be removed promptly to avoid skin irritation and fire hazard.

4. Carbon tetrachloride, benzene, carbon disulfide, chloroform, and other high toxicity solvents shall not be used, except under controlled conditions.

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5. 1.1.1-Trichloroethane or perchlorethylene used for vapor degreasing operations shall be used only in tanks specifically for that purpose.

6. All solvent containers shall be labeled to show contents and precautions to be followed. Proper labels are available through the Manufacturing Supplier Catalog.

7. *There shall be no smoking within 30 feet of any area where flammable solvents are used. The* areas where flammable solvents are continuously used or stored shall be posted and/or marked off as specified by the Safety and Health Department.

8. Chlorinated hydrocarbon solvents, trichloroethylene, tetrachlorethylene, methylene chloride, and methyl chloroform shall not be used in the area where welding is being done.

9. Chlorinated fluorocarbon solvents, such as the Freon and Genetron solvents, are relatively non-toxic materials and are recommended for hand or sonic cleaning applications.

   - Good, general ventilation is required of all operations using these solvents. Specific ventilation requirements shall be established by the Safety and Health Department for specific work areas.

   - Eye protection, skin protection, and impervious gloves are required for personnel exposed to these solvents.

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**BULLETIN NO.:** C-13
**REVISION:** D
**DATE:** February 1987


**SUBJECT: CHEMICAL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLANS**

I. PURPOSE

This Bulletin establishes responsibility for emergency response and spill control of new and waste chemicals.

This procedure applies to spills occurring on property owned or operated by, or leased to, Lockheed-California Company.

II. DEFINITIONS

Spill: An accidental, uncontrolled release of hazardous material.

Hazardous Material: Any chemical or substance with known or suspected characteristics which may cause bodily injury or death to a person by its chemical or physical properties, cause significant property damage, or contaminate the environment. This includes the following properties:

A. Flashpoints below 200°F closed cup or subject to spontaneous heating.

B. Has TLV equal to or below 1000 ppm for gases and vapors, below 500 $mg/m^3$ for dusts and fumes, or less than or equal to 2.0 fibers per cc greater than 5um in length for fibrous materials.

C. Subject to polymerization with release of large amounts of energy.

D. Strong oxidizing or reducing agent.

E. Flammable solid.

F. Cause first degree burns to skin in short time exposure or is systemically toxic by skin contact.

G. Rapid adhesion may occur upon skin contact.

H. $LD_{50}$ below 500 mg/kg.

I. Listed under the Resource Conservation & Recovery Act.

J. Radioactive.

K. In the normal course of operations, may produce dusts, gases, fumes, vapors, mists, or smoke which have one or more of the above characteristics.

III. RESPONSIBILITIES

A. Control and Countermeasures Program Coordinator (Fire Chief or Designee)

1. Convene and conduct C&C Team meetings.

2. Ensure that team members and support personnel are adequately trained.

3. Specify and approve all emergency response and personal preventive equipment.

B. Incident Commander (Duty Fire Captain)

1. Evaluate incident requirements and arrange for necessary support from other Calac organizations or outside back-up groups.

2. Coordinate all activities of the Chemical Spill Control and Countermeasures team during an incident.

3. Be responsible for area control, including personnel evacuation. Post appropriate signs, barriers, banners, etc., for area control.

4. Direct and oversee all transfer, neutralization, and decontamination functions.

C. Support Groups: As determined by the Incident Commander, the following organizations may be required to provide support:

1. Materiel Branch to provide:

- Appropriate empty waste containers
- Liquid transfer hand pumps
- Transportation and industrial vehicle support
- Neutralization chemicals and contaminant materials

2. Facilities Engineering/Maintenance to provide:

- Appropriate technical support; i.e., electrical plumbing, mechanical
- Residual cleanup personnel after hazard control/containment
- Advice on spill containment
- Interface with Federal, State, and Local pollution control agencies

3. Occupational Safety and Health Department to provide:

- Advice on chemical composition/compatibility
- Information on chemical toxicity and hazard properties

- Interface with Cal/OSHA and Federal OSHA
- Monitoring capability to detect hazardous air concentrations

4. Quality Assurance Branch to provide:

   - Advice on chemical processing and composition
   - Laboratory analytical support

5. Training Department to provide:

   - Technical training classes as requested by the C&C Program Coordinator
   - Appropriate technical reference materials to team members

6. All Other Departments:

   - Call the Incident Commander (7-FIRE) immediately in case of spill
   - Support team activities/drills

IV. INCIDENT PROCEDURE

A. Upon emergency notification, the Fire Department will alert and mobilize on site the following Core Support Team (CST).

   1. Environmental Control Group

   2. Occupational Safety and Health Department

   3. Assigned-area Maintenance Department

B. The Incident Commander will initially take whatever steps necessary to contain and control the spilled material.

C. After initial containment, the Incident Commander will access - with the help of the CST the corrective action plan, i.e., transfer, protective equipment, containers, transportation.

D. Secondary Support Team Members will be called, as appropriate, by the Incident Commander.

V. INCIDENT EVALUATION

A. Following every incident/drill, the Control & Countermeasures Program Coordinator will convene team members for a formal debriefing. This debriefing will include:

- Response time
- Team member performance
- Equipment adequacy
- Personal protective equipment
- Communications

VI. General Containment/Countermeasure Guideline (specific procedure dependent on many variables; i.e., quantity, location, weather, etc.)

A. Flammable and Combustible Liquids

- Remove any sources of ignition
- Dike/sandbag area to contain spill
- Apply "oil dry" (NP No. 5-320-020-001) to absorb liquid
- Containerize waste

B. Acid

- Dike/sandbag area to contain spill
- Apply sodium bicarbonate (Raw Material to Control No. 085739990000) neutralize spill
- Containerize waste

C. Caustic

- Dike/sandbag area to contain spill
- Apply neutracit-2 to neutralize spill
- Containerize waste

D. Oxidizers: technique dependent on specific oxidizer

E. Cyanides

- Dike/sandbag area to contain spill
- Apply solution of sodium hydroxide and calcium hypochlorite (if cyanide solution needs to be neutralized)
- Containerize waste

F. Ammonia solution: treat as caustic spill

G. Petroleum oil: treat as flammable or combustible liquid

# Safety & Health Manual

**BULLETIN NO.:** I-3
**REVISION:** B
**DATE:** February 1987


## SUBJECT: SHIPMENT OF HAZARDOUS MATERIALS

The Traffic and Shipping Department is responsible for complying with all Federal, State, and Local laws governing the shipment of all types of hazardous materials. Hazardous materials are equally dangerous to transport within Lockheed. (Refer to other sections in this manual on explosives; also, on control of hazardous parts and materials removed from airplanes.) It is important for the originator of the shipment to identify materials and paperwork properly for transportation.

1. All departments responsible for shipping hazardous materials shall:

   - Before preparing shipping documents, determine the hazardous nature and properties of the materials by contacting the Occupational Safety and Health Department, and/or Process Control, and/or the Engineering Laboratory Division.

   - *If in doubt whether the hazardous materials in question can be shipped by the means requested,* contact the Traffic Department for instructions.

   - Prepare separate shipping documents for each type of hazardous material to be shipped.

   - Stamp "DANGEROUS" on all shipping documents except Railway Express receipts, bills of lading, and airbills.

     — The "class of explosive" noted on customer's shipping documents (GFAE and CCFE) originated by Inventory Management and Change Control may be used instead of the "DANGEROUS" stamp.

   - Mark on shipping documents and the outside of containers on packages the following:

     — The closed cup flashpoint of the article, if highly flammable, and its name.
     — If a gas under pressure, its name and the pressure.
     — If a corrosive chemical, the specific type of corrosive.
     — Poisons.
     — Radioactive properties.

   - Segregate and keep separate from all other material items classified as hazardous.

2. The Safety and Health Department, Process Control Laboratories, and the Engineering Laboratory Division shall, upon request, indicate the hazardous nature and properties of the materials to be shipped.

3. The Traffic and Transportation Department shall transport all items identified as "hazardous" in accordance with safety practices established by the Safety and Health Department, Federal, State, and Local laws.

# Safety & Health Manual



4. The Traffic and Transportation Department shall:

   - Issue instructions to all departments concerning shipment of materials regarded as hazardous.

   - Determine upon request, whether hazardous materials contemplated for shipment are suitable for transportation.

5. The Receiving Stores & Logistics Services Department shall prepare all items for shipment in accordance with Federal, State, and Local laws.

# Safety & Health Manual

**BULLETIN NO.:** I-4
**REVISION:** B
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## SUBJECT: CONTROL OF HAZARDOUS PARTS AND MATERIALS REMOVED FROM AIRPLANES

Quite often it becomes necessary to remove hazardous parts and materials from airplanes and return them through other departments (such as Traffic and Transportation) to vendors and other places.

If accidents are to be prevented, it is necessary the hazardous part must be properly prepared, packaged, and identified at the point of origin so that any other follow-on operation or function or department is aware of the existence of the hazard.

It must be understood that there are often rules and regulations pertaining to these hazardous items which are established by Federal, State, County, or Municipal laws. Lack of compliance could result in civil action against the company and the employee.

The supervisory employee must be responsible for determining that everyone under his jurisdiction who is required to handle the dangerous item is aware of the hazards and complies with the techniques of safe handling.

Special emphasis must be given to:

1. Any item of the fuel or engine systems that is removed from an airplane after they have contained fuel.

   - At the time of removal it shall be the responsibility of the supervisor of the person making the removal to purge the item of fuel or otherwise process the part, if possible, to remove any existing hazard and so advise the person issuing the removal authority.

   - The various safety and health bulletins, procedures, preserving or process specifications, applicable tech orders, etc., are mandatory requirements and shall be followed.

   - Removed parts and package must always be identified as having contained fuel, by application of a Lockheed Decal, "Danger - Has Contained Fuel".

2. Any vessel that contains a gas under pressure.

   - Any bottle, can, tank, or similar item should, if practical, be bled of all excessive pressure before or at the time of removal from the airplane. The safety valves must never be removed or tampered with. The item shall be stored and transported in properly packaged container. The vessel and the container shall both be identified by means of a "Danger" tag.

   - Oxygen in either gaseous or liquid form is hazardous and must be handled in accordance with applicable procedures, directives, specifications, tech orders, and the safety and health bulletin on oxygen contained elsewhere in this manual.

3. Any explosive material, part, or device or any assembly containing such an item must be so identified when it is removed from an airplane by application of a tag, "Danger - Explosives."

   - The techniques for handling, storing, shipping, or transporting explosive items are highly specialized and shall in all instances, be performed only by capable and authorized persons. All existing directives, procedures, specifications, applicable tech orders, and the safety and health bulletins on explosives contained elsewhere in this manual must be complied with.

All employees participating in the functions or operations described in this safety and health bulletin shall be instructed by their supervision so they are capable and responsible for determining that the conditions of identification are satisfied. If the conditions of identification are not satisfied, the employee shall refuse to accept the item into his operation or function. In all instances of refusal, the affected supervisor shall be contacted immediately to take the steps necessary to correct the condition as well as to prevent further recurrence.

The Quality Assurance Organization shall determine that all inspection tags spell out the hazardous conditions prevalent in the item being rejected.

The Production Control and Stores Organizations shall determine that all hazardous items are packaged in the prescribed manner so as to reduce or eliminate the hazard.

The shipment of hazardous items between areas must be coordinated in such a manner as to preclude civil offenses.

The Traffic and Transportation Organization shall determine that all items being moved intraplant or interplant are in a safe condition and comply with all existing laws before they are moved.